# THE HISTORY

OF

# ANCIENT GYNÆCOLOGY

*BY THE SAME AUTHOR.*

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PREFACE BY LAWSON TAIT.

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OF

# ANCIENT GYNÆCOLOGY

BY

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LONDON
BAILLIÈRE, TINDALL AND COX
20 & 21, KING WILLIAM STREET, STRAND
1901

To

THE MEMORY OF

LAWSON TAIT,

WHOSE LABOURS HAVE SO ENRICHED,

IN MODERN TIMES,

THAT BRANCH OF MEDICINE

THE EARLY HISTORY OF WHICH

THESE PAGES ATTEMPT TO RELATE.

"I sum up with the writer of the Book of Maccabees: 'If I have done well, and as befits the subject, it is what I desire: and if I have done ill, it is what I could attain unto.'"

GEORGE ELIOT.

"I know not how it is with you:
I love the first and last—
The whole field of the present view,
The whole flow of the past."

R. L. STEVENSON.

# PREFACE.

The history of obstetrics has been written, in a manner to leave nothing to be desired, by Jacques de Siebold; but neither the history of ancient gynæcology nor even that of modern gynæcology has yet been attempted.

I have in the following pages endeavoured to place before the reader all that can be culled from ancient authors on the subject of the diseases of women.

Beginning with the Papyrus Ebers, the oldest medical work extant on Egyptian medicine, I have gone through the works of the Hindu, the Greek, and the Roman writers down to the time of Paulus Ægineta, and I have abstracted, if not all the passages, at least all that are of importance and interest, on the subject of gynæcology.

In dealing with each author, I have first given a sketch of his life and an account of his works, then a résumé of his writings on gynæcology, after which I have placed under the various headings all the facts concerning the diseases of women contained in the author's work.

When, however, I had completed my task, I felt that, if anyone wished to learn what the ancients knew about any individual subject connected with gynæcology, it would take some time to ascertain the views of each author. I therefore

determined to follow the example of Darwin, who in some of his work, such, for instance, as the "Movement in Plants," had written a résumé in order that the reader may, if he thinks fit, read the last "chapter first, as it includes a summary of the whole volume, and he will see what points interest him, and on which he requires the full evidence." In this last chapter I have also allowed myself more liberty in discussing some matters connected with gynæcology, allusion to which in the body of the work would have been out of place.

That the general practitioner knows little of the history of medicine is due to the fact that systematic lectures on the subject are not usually given in English medical schools, and also because "England alone among the nations distinguished by their contributions to the art has produced no complete work of importance dealing with its history" (Withington).

But though the knowledge may be wanting among the rank and file of the profession, we would hardly have expected that such writers as Greig Smith and Gaillard Thomas, when dealing with the historical aspect of gynæcological operations, would have made such statements as, "Soranus the Younger made important contributions to gynæcology. He was educated at Alexandria, and went to Rome in the year 220 B.C."; and, "Soranus of Ephesus, in his book on 'Diseases of Women,' published a century before Christ," etc. Soranus, we might remark *en passant*, lived during the reigns of Trajan and Hadrian, A.D. 98-138.

But, if I point out the errors of others, let me at once say that this volume has many defects, and that no one is more conscious of the fact than myself; but I would ask the reader to remember that it has been written in a country where every book that one wants to refer to has to be brought from

Europe; and often one must wait, not for months, but for years, before some of these works can be procured.

In spite, however, of these disadvantages, I have neglected, I believe, no work among the ancient classical authors of any importance which contains any passages on gynæcology. Had I been in Europe, I should have glanced through the works of Eros and Marcellus, and I should have endeavoured to have consulted a work mentioned by Daremberg in the first volume of his edition of Oribasius. Therein he says: "J'ai copié à Florence le traité, encore inédit, de Métrodore, intitulé Περὶ τῶν γυναικείων παθῶν. Il ne consiste guère qu'en recettes." I should also have consulted a work by one Cleopatra, entitled "De Passionibus Mulierum," a treatise which is attributed either to the authoress of a work on cosmetics, which was written about the first century after Christ, or to the Egyptian Queen.

The only work that I regret that I have not been able to see is one by Theodorus Priscianus, or, as he is sometimes called, Octavius Horatianus, a writer who lived in the fourth century after Christ, and who was the author of a Latin work entitled "Rerum Medicarum Libri Quatuor," the third book of which treats of the diseases of women. I have been unable to see any extracts of importance from this treatise, and Greenhill says of the whole work: "The style and language of the work are bad, and altogether it is of little interest and value."

Not until I had finished this work had I an opportunity of examining a copy of the Talmud. The Talmud represents the *oral* law of the Jewish people, and the work was compiled by the Rabbins after the second destruction of Jerusalem under Hadrian. The text of the work is called the Mishna, while the commentaries on the text, written by various learned Rabbins, are called the Gemara; but while there is but one

Mishna, there are two Gemara—one known as the Jerusalem, the other as the Babylonian; these commentaries on the Mishna were compiled during the first five centuries A.D.

We find many passages in the Gemara bearing on medicine, surgery, and gynæcology, written by Rabbins who had made a special study of medical science; and these commentaries show us that, while Talmudic medicine lacked originality, the Rabbins were intimately acquainted with Greek medicine.[1]

I have had an opportunity of examining a copy of the Jerusalem Talmud.[2] This, however, contains fewer chapters on the subject of medicine than the Babylonian Talmud; and while there are numerous passages bearing on gynæcology, yet, after making a résumé of what I had abstracted, I did not consider the result of sufficient interest to be included in this work. A few points noted may, however, be alluded to here. The Rabbins were fond of making vaginal examinations, and they were observant enough to discover the hymen. This the Greeks had apparently failed to do, if we are to form a judgment from the anatomical writings of Soranus. Another point of interest was that, by vivisecting animals, they found that the uterus could be cut out without the death of the animal resulting, and they were intrepid enough to undertake embryotomy, and to perform Cæsarean sections not only on the dead, but also on the living.[3] Lastly, the frequent mention of gonorrhœa confirms the opinion that I had already arrived at, that gonorrhœa existed among the ancients, and played an important rôle in the etiology of the diseases of the female generative organs.

[1] "Der medicinische Inhalt des Talmud ist in Westenlichten der späteren griechischen Heilkunde entlehnt" (Haeser). Bergel, however, attacks this assertion.

[2] "Le Talmud de Jérusalem," Schwab, Paris, 1878-89.

[3] Those who are curious to learn more of the medicine and gynæcology of the Talmudists may consult the following works: Rabbinowicz, "La Médicine du Thalmud," Paris, 1880; Israëls, "Tentamen Historico-medicum exhibens Collectanea Gynæcologica ex Talmude Babylonico," 1848.

As it would have been impossible to have written the sketch of the history of gynæcology without at the same time giving an outline of the history of medicine and surgery, I have, when necessary, compiled from Haesar, Puschmann, Sprengel, Daremberg, Bass, and others, sufficient of the general history of ancient medicine to enable the reader to appreciate the progress made by gynæcology when compared with the progress made by the other branches of medicine. But in this outline I have been careful not to overburden the text with references, for to those acquainted with the history of ancient medicine such references are not necessary, while to those unacquainted with the subject such references would be useless. When, however, I have quoted any passages bearing on the particular subject of this history, I have been careful to give such references as will enable anyone acquainted with the originals to verify them.

There is but one sad memory connected with this book. Mr. Lawson Tait, my teacher and friend, had from the outset encouraged me to undertake this task, and, with his usual impulsive generosity, had agreed to read it through, and to write an introductory chapter on the subject with which his name must be for ever connected; for who will deny that he has added to the advancement of operative gynæcology more than anyone who has preceded him? This man was a genius, and if ever man took a knife into his hand who understood his work, this was the man. He had a brain that was omniscient; he came to his work primed with the experience of the difficulties of 3,000 cases of abdominal section; he dealt with each case with a master's hand, not with the empiric touch that so many display. Those who knew him intimately knew him to be a genius; and when the tongue of envy has ceased, and age has paid its just tribute to this man, then, and not till then, will gynæcologists acknow-

ledge their real indebtedness to this great and marvellous surgeon.

Lastly I wish to acknowledge my indebtedness to the authors named in the list of books consulted, which I have chiefly used in compiling this work.

I wish to thank Miss Lewington for the great pains she has taken in caligraphing the whole work.

W. J. STEWART McKAY.

SYDNEY, NEW SOUTH WALES,
*August* 1*st*, 1900.

## PREFATORIAL NOTE BY THE PUBLISHERS.

Owing to the lamented death of the late Mr. Lawson Tait, who had kindly offered to supervise this work while passing through the press, we were glad to avail ourselves of the able services of Dr. J. Knott, of Dublin, who has kindly read the proofs, and made many necessary alterations and corrections. The residence of the author at the Antipodes rendered it obviously impossible for him to do this without incurring unnecessary delay.

B. T. & C.

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## *PART I.*

# THE HISTORY

OF

# ANCIENT GYNÆCOLOGY.

## *PART I.*

### CHAPTER I.

### INTRODUCTORY.

In seeking for materials for a history of ancient gynæcology we must travel back to the sixteenth century B.C., and examine the pages of the Papyrus Ebers. This papyrus is the oldest work on medicine that we possess, and in its pages we find some facts concerning gynæcology; unfortunately for our purpose, the Hermetic Book which was devoted to the consideration of the diseases of women has not been preserved.

We next come to examine the works of the Hindu writers, and, fortunately for English readers, Dr. Wise, of the Bengal Medical Service, has left us two works which deal very thoroughly with ancient Hindu medicine. The works to which Wise specially devoted his labours are the "Charaka Veda" and the "Sushruta Veda." The period at which these Vedas were composed has not been definitely determined, but portions of these works date back to 900 B.C., and

as they contain many passages bearing on the diseases of women, they enable us to see the great antiquity of certain therapeutic agents used in the treatment of gynæcological cases at the present time.

We then come to the Grecian period, and to the genuine works of Hippocrates (born 460 B.C.); these, however, contain little of interest on our subject. On the other hand, among the works attributed to Hippocrates, but now considered spurious, we have several treatises on gynæcology which contain a surprising number of accurate observations, and convince us that gynæcology was a branch of medicine that had received a large share of attention among the Greeks.

From Greece we travel to Alexandria (third and fourth centuries B.C.), but we seek in vain for materials for our work, for time has not preserved for us any of the many treatises which we have reason to believe were written on the diseases of women by those who studied in the schools of the Egyptian Athens.

Turning to the West, we now come to the Roman period, and in the first centuries of the Christian era we encounter several authors whose works contain the facts we seek.

The first of these writers was Celsus (50 B.C.—7 A.D.), who lived in the reigns of Augustus and Tiberius, and who has left us, in his most gracefully-written work on medicine, some observations on the anatomy of the uterus, and some descriptions of gynæcological operations. Pliny (23-79 A.D.), who lived soon after Celsus, has recorded, in his encyclopædic work on natural history, many therapeutic agents in use in the treatment of the diseases of women. Soranus of Ephesus, who lived in the reigns of Trajan and Hadrian, has left us a most brilliant and interesting work on gynæcology and obstetrics; while Rufus, also of Ephesus, has given us a catalogue of the

terms applied to the various parts of the female organs of generation.

Travelling down the stream of time, we meet with Aretæus, of the first, and Dioscorides, of the first or second century, and we find something of interest in both these writers' works. We next come to the illustrious Galen (born 170 A.D.), whose monumental labours have, however, not enriched the field of gynæcology, though we find among his genuine works an interesting treatise on the dissection of the female genital organs, as well as many observations on the physiology of these parts.

Leaving Italy, we turn once more to the East, and under the Byzantine rule we find Oribasius (326—403 A.D.) compiling his vast encyclopædia of seventy volumes, from whose pages we are able to glean some facts about our subject. At the same Court, in the sixth century, Aetius composed his medical and surgical treatises in sixteen books, the last of which is devoted to the diseases of women. This work is of the greatest importance to us, for while it contains much that Soranus has already given us, it at the same time gives us chapters from such authors as Archigenes and Philumenus, whose works have perished for ever. We shall also notice the curious work of Moschion, which is now known to be only an abbreviation of the larger treatise of Soranus.

Lastly, we come to the seventh century, and to the brilliant résumé of ancient medicine contained in the great work of Paulus Ægineta.

Here our labours cease; for with the death of Paul the Dark Ages began, and the gynæcology contained in the works of the Arabian authors is only a servile copy from the works of those who had preceded them.

## CHAPTER II.

### EGYPT.

The records that we possess of the medical works of the Egyptians are not many, but as they are the oldest writings on medicine that we have, they give us a considerable insight into the state of medical science fourteen or fifteen centuries before the Christian era.

Before these authentic records came to light we were perhaps accustomed to accord to the Egyptians too great credit for their medical knowledge. Be this as it may, there can, however, be no doubt that medicine was extensively cultivated by the Egyptians, and in certain directions they made considerable advances, for the good results that followed their treatment made the Egyptian physicians much sought after in their own and other countries. Still, these early promises were not fulfilled, and having advanced to a certain point, Egyptian medicine appears to have come to a standstill. Many reasons have been put forward to explain this fact, the most probable conjecture being the too intimate association of medicine with the sacerdotal class. Whether the priests were the actual practitioners or not cannot be ascertained; but this much is certain, that the healing was chiefly performed in and around the temples, either by priest-physicians or physicians under the patronage of the officials of the

temple.[1] Prayers were combined with medical treatment in sickness, and were specially written for each case. "In conformity with the priestly character of the doctors, they offered up these prayers themselves, and ascribed at least as much importance to them as they did to their medical directions.

"Many doctors were members of the great priest colleges, and lived in the teaching institutions belonging to the temples. They there taught medicine and carried on medical practice.

"Whether there existed, in addition to the doctors partaking of the priestly character, other practitioners who learnt and practised their calling as empirics is not certain, but is probable."[2]

"Instruction was founded upon the 'Sacred Books,' in which all the wisdom of the Egyptians was contained. Thoth, the god of Wisdom, was looked upon as the author, 'who also conferred enlightenment upon doctors.' The Sacred or Hermetic Books formed a kind of encyclopædia, and consisted of forty-two parts. . . . With medicine the last six books were concerned, being called the 'Ambres.'

"It is not probable that medical teaching confined itself to the medical works belonging to the hermetic writings, or to the works illustrating these, in which the libraries connected with the temple schools were without doubt very rich. . . . The rule existed in Egypt that patients should be brought into the temple to await help and the alleviation of their pains at the hands of the priests. The latter were also called to the dwellings of those sick people who were too ill to be brought into the temple."[3]

[1] Herodotus, iii., l. 129.

[2] Puschmann, "A History of Medical Education from the Most Remote to the Most Recent Times," translated by Hare. London, 1891. [3] *Ibid.*

According to Diodorus Siculus the ancient Egyptian physicians were supposed to treat their patients according to the rules in the Hermetic Books. "Provided he followed them implicitly, no blame was incurred though the patient died; if he departed from those in the least, and at the same time the case ended fatally, his own life became the forfeit."[1] This, however, was probably only relative; Aristotle[2] says that the treatment was not to be altered until after the fourth day; and Finlayson[3] remarks: "The complicated formulæ and large choice of alternative remedies indicated in the Ebers Papyrus would seem to show that no great weight was attached to strict adherence to special methods, deviation from which was fatal." The Egyptians probably knew next to nothing about anatomy, as their religion forbade dissection, and the embalmers probably learnt little. After the Paraschistes had made the preliminary abdominal incision, the Taricheutæ were accustomed to pass their hands through the incision into the body and remove the heart and kidneys and digestive organs. If they were accustomed to remove the uterus and ovaries, they must have gained some knowledge of the organs, but we have no authority for saying that the uterus was really removed. The custom that the Egyptians followed, that of making models of the parts that had been healed and then hanging them in the temples, may have been useful for clinical instruction.

If we are to believe the account given by Herodotus, the idea of specialism originated in Egypt. He says: "The art of medicine is thus divided among them: each physician applies himself to one disease only, and not more. All places abound

[1] Millar, "Disquisitions in the History of Medicine," Edinburgh, 1811.
[2] Aristotle, "Politics," Book III., c. 15.
[3] Finlayson, "Ancient Egyptian Medicine," *Brit. Med. Journal*, vol. i., p. 748, 1893.

in physicians. Some physicians are for the eyes, others for the head, others for the teeth, others for parts about the belly, and others for internal disorders."[1]

The chief records that we possess that have aided us in elucidating the state of Egyptian medicine are as follows:

1. The large and small Papyrus Brugsch contained in the Berlin Museum. The date of the larger, known as the Berlin Papyrus, is about the fourteenth century. This has been published in facsimile by Brugsch, and commented on by Chabas, Renouf, and others. Chabas draws attention to the fact that out of 170 medical receipts in the work twenty-eight are for enemata.

2. The British Museum Medical Papyrus, whose date is 1100 B.C. This has not yet been published, but Buch has given an account of it.

3. Various fragments at Leyden, Turin, Boulogne, and Paris—none of great importance.

4. The Papyrus Ebers, whose date is set down as 1550 B.C. Joachim has made a translation into German of this, the oldest and most important of the papyri that deal with Egyptian medicine. In his Introduction he says: "The Ebers Papyrus is at present preserved in the University Library at Leipzig. It surpasses in importance all other medical papyri in the richness of its contents and its completeness and perfection; it is the largest, the most beautifully written, and the best preserved of the medical papyri. It was obtained by Ebers during his stay in Egypt in the winter of 1872-73 from a citizen of Luxor.

"On the back of the first page there is a calendar from which Ebers tried to determine the date of the writing. From

[1] Herodotus, ii. 84.

the dates in this calendar Ebers fixed the composing of the Papyrus to the years 1553-1550 B.C.

"What are we to understand by the Ebers Papyrus?

"Its editor declares it to be the book περὶ φαρμάκων mentioned by Clement of Alexandria, and maintains this opinion in his latest work on his Papyrus . . .

"We know that Clement of Alexandria, who lived in the second century after Christ, and who is considered one of the best authorities on Egypt, relates that forty-two Hermetic Books existed there, thirty-six of which treated of philosophy, and the remaining six of medicine. They were as follows:

1. Περὶ τῆς τοῦ σωματος κατασκευῆς.
2. Περὶ νόσων.
3. Περὶ ὀργάνων.
4. Περὶ φαρμάκων.
5. Περὶ οφθαλμῶν.
6. Περὶ τῶν γυναικίων[1] (νόσων).

"This opinion of the learned investigator, that the Ebers Papyrus was the περὶ φαρμάκων, I cannot at all share. In a work of such a name the physician aims at a treatise on individual remedies, their influence, application, injurious effects, etc. The contents of the papyrus do not by any means answer to this; they treat rather of diseases of the organs, particularly disorders of the stomach, affections of the eyes, diseases of women, and also of the construction of the human body. I believe, therefore, that we must understand by the Ebers Papyrus a kind of medical compendium. It is hardly necessary to say that by this it loses nothing either in character or importance, especially as regards the history of medicine" (Joachim-Finlayson).

[1] γυναικείων (?).

Ebers himself thinks that the papyrus has been a compilation, several treatises having been combined to make one large complete work. This papyrus contains some passages which deal with the diseases of women; and these we shall now proceed to extract, first, however, drawing attention to the fact that among the Hermetic Books there was a special work on gynæcology.

## The Passages bearing on Gynæcology in the Ebers Papyrus.

On page 170[1] we have prolapse of the uterus mentioned thus: "A remedy to enable the uterus of a woman to return to its proper region"; then follow several prescriptions, some prepared with honey and petroleum, which had apparently to be smeared on with the finger of the patient, and the uterus was then to be pressed upon and returned to its place. The fumes of wax and hot charcoal are also recommended to be allowed to penetrate the uterine cavity of the prolapsed womb.

Page 171: A receipt is given to enable a woman to give birth to a child, and on the next page abortion is apparently alluded to, for a receipt is given to detach or disperse (*ablösen, loslösen, abschneiden, entbinden*) the fœtus in the womb. One of these remedies the author directs to be rolled into a round mass and to be placed in the vulva. Another is to be smeared on the womb, and another to be injected into the vulva.

Page 173: The beginning of a remedy to prevent both breasts from sinking. In a note on the word "breast," Joachim quotes Lüring as taking the Egyptian word *benti* to mean "die Papillen der Brust," while Stern interprets it as "ovaria uteri mulieris."

[1] Joachim's German translation.

The passage then runs: "If the patient has a flow of blood, and the period comes on suddenly, so that the blood is poured out, then you know that the patient is not suffering from the *mesu* disease [Fluor Albus ?].

"When we wish to prevent a patient from suffering from fluor albus we proceed as follows: The dried liver of a swallow is taken and rubbed up with some sour milk; this is then to be placed on the breast, belly, and joints."

Then comes a remedy against a bad breast.

Page 174: A remedy against corrosion of the vulva producing round pustule in the vagina.

Page 175: A remedy to prevent disease starting in the labia, and against shooting pains in the vulva, and round pustule originating in the vagina.

Page 176: A receipt to cool the vulva or uterus, and to disperse inflammation from these parts. This was to consist of palm fruit and cypress blended with oil, and this was looked upon as an astringent remedy. Mention is also made of peppermint-water, which was used for vaginal injections.

Page 177: "When you examine a woman and find that the fluid that escapes from her vulva is like water, and you also find that the sediment of the water resembles warm blood, then you must tell her that she has the *axat* disease in her vulva." A note to *axat* says that Brugsch's interpretation is *kratzen, ritzen, renkratzen, i.e.*, pruritus. The remedy for this case is to prepare for the patient jaspis, which attracts water, and rub it up with honey and collyrium, and after preparing a pessary of linen with it, introduce the pessary and leave it in the vagina for four days.

Page 177: "When you make an examination of a patient and find that she has disease on one side of her womb, you tell her that she has an obstruction to her menstruation;

then, having made your diagnosis, prepare a remedy which is applied to the womb."

Page 177: "If you examine a woman who has lived for a number of years without menstruating, and she vomits something like foam, and her womb is as if a fire were placed beneath it, and then you find that she recovers again, after having vomited, you say to her, 'It is an incoming of blood into your womb.'"

Page 178: A remedy for painful inflammation of the vulva or uterus; there is also given a receipt for a remedy which was introduced into the uterus.

The above passages are almost the sum-total of the gynæcology contained in the Ebers Papyrus. Analyzed, these passages show us that even thus early some attention was paid to the diseases peculiar to women, and since we are given to understand that one of the Hermetic Books was entirely devoted to the Diseases of Women, we have here only a small scrap of the knowledge of the physicians of those far-off times in this branch of medicine.

We see from the first and second passages quoted from page 177 that examinations of the vagina and cervix were made, and this is confirmed by the third extract from the same page, where obstructions to menstruation are alluded to as being possible from disease of the one side of the cervix.

Of the greatest interest is the passage on page 173, which Joachim considers alludes to the breasts, Lüring to the nipples, but which Stern reads as prolapse of the ovaries. If the latter were indeed the correct reading, it would mean that the Egyptians not only knew of the existence of the ovaries (learnt from the rites preceding the embalming process), but it would also imply that they had acquired sufficient skill in

vaginal examinations to ascertain the position and malpositions of the ovaries. This is perhaps expecting too much.

With regard to anatomy, they evidently made a distinction between the uterus, the vagina, and the external genitals, for we have three distinct words used in the Papyrus. Thus, on page 170 the uterus is evidently alluded to in referring to the treatment of prolapsus, and the term *met-ret* is used. On page 174 the vagina is referred to and the term *sĕd* is used, while in the other passages the general term *ât* is used, translated by Joachim usually as vulva, which may be taken in a broad sense to mean uterus, vagina, or the external organ of generation, or merely the latter as implied nowadays.

The cervix was recognised by inspection in cases of prolapse and by palpation, as shown in the passage on page 177, where obstruction from disease on one side of the cervix is referred to. The uterine canal was recognised, for fumigation is recommended first in case of prolapse; and, on page 178, the remedy is intended for introduction into the uterus.

The therapeutic means employed are clearly set forth. Vaginal and rectal injections with medicated fluids were much practised, and it is to be noted that the Papyrus Brugsch, as M. Chabas has pointed out, contains twenty-eight medical receipts for enemata. With regard to the origin of the enema, we may here allude *en passant* to the fable handed down to us by Diodorus Siculus and Pliny, who imagined that the ibis gave the first idea of such a procedure, as it is generally supposed that the bird used its bill as a cannula for injecting water into its bowels. The mistake originated from the fact that the hieroglyphs to express the god Thoth (Tahuti) were the same as those used to express the ibis, while the bill of the bird acting as a cannula was a gratuitous piece of imagination. We have also here mentioned for the first time in

medicine the suppository and the pessary. The suppository is described on page 171 as composed of drugs rolled into a bolus and introduced into the vagina; while, on the other hand, the pessary is frequently mentioned, and was made by impregnating a piece of lint with various drugs, then rolling it into a rod-shaped body so as to apply it to the part to be treated. The pessary here referred to had, however, nothing in common with the mechanical pessary of to-day, except that it helped to support the womb in cases of prolapsus.

Fumigation, which in later years became such an important therapeutic process with the Greeks, is shown to have been used in these early times.

When at last we come to deal with the actual diseases mentioned, we find the first record of complete prolapse of the uterus, and its treatment by local applications and reposition. We can well imagine how common must have been this complaint in those ancient times, when the patients, during labour, were entirely in the hands of midwives, the physician being probably called in only in cases of great emergency—a custom which holds good among some nations, such as the Chinese, even at the present day, where, as Wise points out, "a false shame prevents the Chinese females from receiving assistance from the male sex. They often lose their lives by such conduct in case of hæmorrhage, cross-births, etc."

With regard to the other diseases, we may make an approximate guess on the following grounds. It is an assured fact, as mentioned in Genesis, that prostitution existed thus early. One Tamar, sitting by the roadside, is mentioned, and her relations with Judah. Not only did prostitution exist, but we have apparent evidence that gonorrhœa, but not syphilis, also existed. In Leviticus xv. 2 we have the follow-

ing passage: "When any man hath a running issue[1] out of his flesh, because of his issue he is unclean," and the infectious nature of the disease is alluded to. Later on (Deuteronomy xxiv. 1) we find that "when a man hath taken a wife and married her, and it come to pass that she finds no favour in his eyes, because he hath found some uncleanness in her, then let him write her a bill of divorcement." Now, if gonorrhœa existed, it follows naturally that Bartholinian gland abscesses existed, as also did vaginitis, endometritis, salpingitis, and pyo-salpinx. There can be little doubt that some of these diseases were treated, and it is probable that the priest-physicians, if they lacked gynæcological material from the modesty of the Egyptian women (though the revels at the feast of Bubastis in later years show us little modesty), could have obtained plenty of subjects among the prostitutes of the times, who would naturally be desirous of being cured of their complaints.

[1] The Septuagint Version renders the Hebrew word "Hazzab"—the man with the issue, by ὁ γονορρυής—the man with a gonorrhœa. We shall see, however, that the term "gonorrhœa" was often used by the ancients where we now use the term "spermatorrhœa."

# CHAPTER III.

## HINDU MEDICINE.

"The ancient history of the Hindus is divided into three epochs: an age of freedom, of conquest, and of servitude. The first is the ancient Vedic or independent period, which Max Müller divides into three periods. The first embraces the period when the Aryan race had recently settled in India, and extended from 1200 to 1000 B.C. The second, the Mantra period, from 1000 to 800 B.C., when the Vedic hymns were stored up in the memory. The third, or Brahmanam period, extended from 800 to 600 B.C., when there was a gradual advancement of the priestly class, and the separation was made of the sacerdotal from the other classes. It was during this period that the four sacred Vedas were supposed to have been collected."[1]

The Vedas are four in number, viz., Rig-Véda, Yajur-Véda, Sáma-Véda, and Atharva-Véda, and were received from Brahma, one having been produced from each of his four mouths. Later on, Brahma produced the second class of sacred books, called the Upavédas, one of which is called the Ayur-Véda, and contains the medical writings of highest antiquity and importance among the Hindus.

The oldest of these is that known as the Charaka Ayur-

[1] Wise, "Review of the History of Medicine," vol. i., p. 11.

Véda. This work is said to have been communicated by Atreya to Agnivesha, and by the latter to Charaka, who condensed it or expanded it according as he considered fit; the result is a work of some 120 chapters in eight divisions. The thirtieth chapter of the sixth division is devoted to the diseases of the generative organs.

Later than this work comes the Susruta Ayur-Véda. Susruta appears to have been the pupil of Charaka, and one Dhanwantari revealed this Ayur-Véda to Charaka, who in turn taught his pupil. Dhanwantari himself obtained his knowledge from Indra through the Aswins from Dacsha, who received it from Brahma. The work is more surgical than the other, though it deals with general diseases and the management of women and children; it also ranks first in merit, and is more systematic.

The date of these works has given rise to much controversy. Professor Wilson says that "from the Charaka and Susruta being mentioned in the Puranas, the ninth or tenth century is the most modern limit of our conjecture, while the style of the authors, as well as these having been the heroes of fable, indicates a long anterior date." Wise says the Charaka and Susruta must have been prepared in a very early age, probably from the third to the ninth or tenth century before the Christian era. Webb and Royle[1] have shown that the writings are of great antiquity.

Glancing now through these two works, we shall first examine the method of obtaining anatomical knowledge.

The anatomy of the Hindus was very superficial, although dissections were not forbidden: "a man should dissect in order that he may know the different parts of the body." Though an unclean thing to touch, yet the code of Manu had

[1] Royle, "An Essay on the Antiquity of Hindoo Medicine," London, 1837.

directed "that one who has touched a corpse is made clean by bathing." The description given of the manner of preparing the body for dissection is not at all pleasant. It was first placed for some days in a stream, until it became putrid, and then the skin was removed by a brush, and the different parts of the body were examined.

There is one passage in this work on the anatomy of the uterus which is of interest, as it would apparently refer to the Fallopian tubes: "The menses have two canals, the roots of which are the uterus, and the dhamanee vessels, which convey the menses. When they are wounded, barrenness is caused, and the menses cease." Dhamanee vessels, Wise explains, are tubular vessels, such as veins, etc.

"The means by which the young practitioner is to obtain dexterity in the use of his instruments are of a mixed character. . . . Some are striking specimens of the lame contrivances to which the want of the only effective vehicle of instruction, human dissection, compelled the Hindus to have recourse. . . . Thus, the different kinds of incision—longitudinal, transverse, inverted and circular—are directed to be practised on flowers, bulbs and gourds."[1] Although the Hindus may have had only a superficial knowledge of anatomy, this did not prevent them from attempting major operations, and in their writings we have mention of abdominal sections. Taking for granted that these works were written 500 B.C., then the following passages are the first mention of such operations; but if these works date later than this, then the Alexandrian surgeons have a prior claim, for we shall see later on that they deliberately operated on the abdominal organs. In the chapter on "Enlargement of the Abdomen" (Udara) the following passage occurs:

[1] Wilson, *Oriental Magazine*, Calcutta, February and March, 1823.

"*Baddaguda.*—This form [of swelling of the abdomen] is produced by the accumulation of indigestible matters with the food. The person has stercoral vomiting. The stools are in small quantities, and are evacuated with great pain; the umbilicus and heart are much swelled.

"In this disease it is recommended to give ghee internally, and rub it over the abdomen, while perspiration is produced by hot baths. When the remedies are of no use and the situation of the patient desperate, an operation is recommended, which is to be performed in the following manner: Below and on the left side of the umbilicus, and four fingers' breadth from the linea alba, an incision is to be made four fingers' breadth in length, and the breadth of four fingers of the gut is to be drawn out, and the substance, whether hair, or stone, or a bad secretion, which was the cause of the disease is to be removed. Ghee and honey is to be rubbed over the wound in the intestine, and it is then returned into the abdomen. Apply sutures, and treat the internal wound as recommended in such cases" (Wise).

Sir Bhagvat Sinh Jee, in his work on Medical Science,[1] adds to the above information the following: "Abdominal operations, however, and operations in the mouth or about the anus, should be performed when the patient is fasting. The operation should be performed with the utmost care; after it is over, a sesamum poultice should be applied to the wound, and a cloth bandage be tied round it. A certain incense should be kept burning in the operation-room."

In the treatment of ascites we see the first use of the (Southey's) trocar: "A friend is to hold the patient in a reclining posture by the armpits. The practitioner then

[1] Bhagvat Sinh Jee, "A Short History of Aryan Medical Science." London, 1896.

introduces a trocar an inch below and on the left side of the umbilicus; the trocar is removed, and a tube is put in its place. The morbid fluid is for sixteen days to be allowed slowly to evacuate itself, and a light bandage is to be placed round the abdomen after the operation, so that the air may not swell the abdomen."

With regard to the instruments, there were 125 enumerated. Among these may be mentioned twenty-four forms of forceps or pincers; tubular instruments like catheters, twenty varieties; bougies, thirty sorts; three-sided needles; and a rectal speculum. The actual cautery is also mentioned; likewise enemata, and suppositories and pessaries.

Coming now to the diseases of women mentioned in these works, the information is not very full. It is pointed out that there are twenty-four diseases of the female organs of generation, and they run after the following style:

1. Udábertá: when the menses are discharged with great pain and are frothy.

2. Bandhyá: difficult menstruation; dysmenorrhœa (nostartoboh), when the menses are stopped by the accumulation of unhealthy humours in the part.

3. Bíplutá: continued pain in the genital organs.

4. Paríplutá: severe pain during connection.

5. Bátalá: in this disease the vagina is contracted and rough, accompanied with pain.

6. Menorrhagia (prodoroh) is described—accompanied by fever and pain over the body, giddiness, fainting, thirst, and great heat.

9. Patraganí: when the infant dies, or abortion has taken place, with a great discharge of blood.

12. Karníní: when phlegm and blood are deranged in the vagina, small granulations form, like the grains of rice.

17. Palaní: when a large man has connection with a small and young female, he injures the parts and produces this disease.

18. Mahatí: when the vagina is very large.

19. Suchíbuktra: when the entrance is very small.

The treatment of these diseases will vary, according to the humour diseased.

When the air is diseased, apply warm fomentations, such as steam-baths, etc., and poultices; use also injections of heated oleaginous medicines, which cure diseased air. A piece of cloth soaked in oil is to be kept in the vagina. If there is a bad smell, use the decoction of astringent barks.

In dysmenorrhœa the pubes should be rubbed with oil and ghee, and the vagina is to be kept distended with a roller of cloth.

The treatment of menorrhagia should resemble that of hæmorrhagia, such as the application of cold and astringent medicines, avoiding venery, and living on cooling and simple food.

*Kanda* (Utero-vaginal Tumours).—These may arise from mechanical injury of the part. When air produces the disease, the tumour is dry and of a dirty or yellow colour, and has furrows on its surface. When phlegm produces the tumour, it is like the colour of the indigo flower, and is very itchy.

*Treatment.*—In the treatment of these tumours use the flesh of the shell-fish and the pulp of tamarinds; rub them together, and apply the mixture to the tumour. A paste made of the flowers of Gossa is to be applied to the part, and will be found of great use.

In treating of the cure of piles, varicose disease of the vagina is referred to: Tumours, like those of piles, sometimes

form in the cavities of the ear, nose, mouth, vagina and penis. Also, in referring to the operation on piles, the lithotomy position is described. The patient is to be placed upon a table, with a good light thrown upon the part. He is to be supported by two assistants holding his head and shoulders, and his loins are to be elevated with a soft cushion. The knees and legs are to be raised and separated by a bandage passing round the knees, feet and neck. The passage shows the great antiquity of this position.

Stone in the female bladder was operated on. If the suprapubic operation were undertaken, this was always performed by the husband of the woman, as it was considered dangerous. Speaking of the operation for stone on the female, the passage says: "In females the bladder is situated near the uterus, and care must therefore be taken not to thrust the knife directly forward, as it will wound the uterus, and the urine will pass through the vagina, forming a fistula."

With regard to urethral injections, the directions are, for the female, that the tube should be four fingers' breadth in length, and the opening capable of allowing the passage of a small pea; the tube should be smeared with oil and gently introduced, and marks should be fixed on the tube to prevent it being introduced too far. The bladders of pigs, buffaloes, etc., were used for injecting these fluids into the bowel, vagina, and bladder; the injection-pipe was made of gold, silver, copper, iron, hard wood, or ivory. Nutrient enemata of animal and vegetable broths were often used. Fumigation of various parts by means of a tube was often resorted to.

*Summary.*—We see from the short review of Hindu medicine that these people made considerable progress in surgery. Their instruments were numerous, and embraced the three-sided surgical needle. Their anatomy was superficial, yet

they did not shrink from performing abdominal sections. We find them using the rectal speculum, catheters made of various metals, irrigators formed from the bladders of cattle or made like leather bags. The gynæcologists used the medicated pessary, the vaginal douche, hot fomentations and fumigations, while poultices were in general demand. In cases of abdominal dropsy the trocar was resorted to and the fluid drained off, while it is more than likely that ovarian cysts were occasionally tapped, being mistaken for cases of ascites.

The actual diseases mentioned under the heading of Gynæcology are chiefly the disorders of menstruation; and the treatment of them by rest, fomentations, and vaginal injections is excellent.

We may finish this brief review by a quotation from Wise, to whom we are so indebted for our knowledge of these ancient works. He says: "Considering these various circumstances and points of resemblance, it is impossible to divest one's self of the conviction that there were once communities in Hindustan possessing eminent scholars, who cultivated literature and science, by which the Egyptian and Grecian philosophers profited. Such an early state of civilization in India reached back at least a thousand years before Christ,[1] and the study of medicine was pursued with success centuries before it could have been so advanced in character and so permanent in its influence as Alexander the Great found it in the fourth century B.C.[2] It is to the Hindus we owe the first system of medicine."

[1] Max Müller holds that in the Vedic period Indian works were transmitted by oral tradition alone, and that no written documents are demonstrable prior to the time of Azoka, B.C. 259-222 (Baas).

[2] Hass declares that Susruta never existed (Baas).

# CHAPTER IV.

## GRECIAN MEDICINE.

*Origin of Grecian Medicine.*—The origin of Grecian medicine has given rise to much speculation, for we have but a scanty knowledge of medicine previous to the works of Hippocrates (B.C. 460).

For some centuries anterior to this date Grecian medicine was intimately connected with Grecian philosophy. It is, however, proved beyond doubt that Grecian medicine existed long antecedent to Grecian philosophy. Two theories exist to choose from, when dealing with the origin both of the medicine and the philosophy of the Greeks. The first is that Hindu medicine and philosophy came to great perfection long before the Greeks had advanced to eminence as a nation, and therefore when they did introduce medicine, and later on philosophy, into Greece, that the introduction was made from Egypt and from India; and such writers as Wise, Littré, Niebuhr, Weber, Hurschberg, Pocock, Diarz, have given their support to the view that Hippocrates and the earlier Greeks were largely indebted to India and Egypt for their knowledge of medicine.

The other view is that Grecian philosophy was indigenous, and that while a small amount of knowledge may have been

derived from outside sources, still, these two branches of knowledge, medicine and philosophy, were practically offsprings of the Grecian mind. The matter may be easily settled by saying that, if Grecian medicine arose *de novo* in Greece, its origin was remote, and as years passed by it grew and was shaped by the marvellous intellects of that brilliant nation; while if it was derived from foreign sources, among which undoubtedly may be reckoned Egypt and India, then it was altered and so improved as to become almost a new creation.

Whether derived originally from outside sources or not, there can be no doubt that, when once medicine existed as a recognised branch of learning, it received great assistance from the knowledge derived from philosophers and medical men by their travels through Egypt and the East. Thus, it is related that Pythagoras (B.C. 608), the philosopher, spent twenty-two years in Egypt, Chaldea, and Eastern Asia, making investigations into various branches of science, including medicine.

*Hellenic Medicine previous to Hippocrates.*—Whilst the oldest documents that we now possess on Grecian medicine are those classed under the general title "The Works of Hippocrates," it has become manifest, after a careful study of these works, that many other medical works must have existed in Greece previous to 430 B.C., the period in which Hippocrates lived and flourished. We know these works only by a few fragments or quotations, preserved in later works. How much the world would have been richer in knowledge if the Alexandrian Library had not been destroyed by the Caliph Omar (A.D. 642) we shall never know, but that an enormous number of works on every possible subject did exist may be surmised, when it is remembered that the books

of this library, among other things, supplied fuel for 4,000 baths for six months.

By a singular coincidence, we are not in possession of works dating immediately after Hippocrates, so that two lacunæ exist.

Previous to the times in which Hippocrates practised, Greek medicine had four sources, and it will be necessary to glance at these in order to comprehend the sources from which Hippocrates gained much of his knowledge, and in order to understand how medical, surgical, or gynæcological cases came to be studied, recorded, and treated.

Usually, in tracing the history of Hellenic medicine, three classes of practitioners only have been described, it being taken for granted that the priests at the temples and the Asclepiadæ were one and the same. This, however, does not seem to have been the case, as will presently be shown.

To Asclepius is assigned the honour of having originated Grecian medicine. No doubt Asclepius was a purely mythical personage; but as those who gained experience in curing gradually became prominent personages, they became known under the name of Asclepiadæ, and they found it advisable to bring about the idea that Asclepius was a divine person, and that they were his real descendants. Be this as it may, there sprang up many temples in which Asclepius was worshipped, and his aid was besought in case of sickness. These temples were presided over by priests who in time no doubt acquired some medical knowledge, but they were not the Asclepiadæ proper; these latter were the trained medical practitioners of the period attached to the temples. As Puschmann says, the priests of the temples of Asclepius were not doctors, as many assume. Certainly there were among them, as among their assistants, the Zakoroi, many who were skilled in

medical science; indeed, they had probably learned the subject systematically. But between the healing art as practised in the Asclepian temples and that of the professional doctors the great distinction existed that in the former case it was held to be not a part of the human understanding, but a divine revelation.

The name of a temple of healing was the Asclepieum, and such temples were founded in various parts of Greece. The situation of the temple was often chosen on account of the thermæ, which could be used as an aid, if necessary, in curing the patients. Schultze gives a list of over sixty of these Asclepian temples.

Let us glance for a moment at one of them. We find it situated in some healthy locality, such as a well-wooded hill, surrounded by artistically laid-out gardens, in which was often found some mineral spring.[1] In the building itself we find statues and frescoes, and on the walls are votive tablets on which are recorded the disease, its history, and the course of treatment adopted to cure it. Often casts of the diseased parts were made and placed by the side of the tablets, making them more valuable as clinical histories. The temples were kept scrupulously clean, and all those who came as patients were enjoined to have a bath before presenting themselves for treatment. But the patients were not treated straight away. Probably the priests did not feel quite equal to that; so they adopted the plan of making the patient sleep during the night in the temple, where, thinking of his woes, he generally dreamt, and in his dreams the deity revealed himself to him, and the treatment of the disease was pointed out. When, however, this did not occur, the

[1] Thermæ are frequently mentioned by Soranus in the treatment of gynæcological cases, and Oribasius, quoting Antyllus, recommended them to women who are irregular at the periods.

patient told his dreams to the priests, and the priest then shaped the treatment. If the patient, however, did not dream, then it was necessary for him to sleep several nights in the temple; and if he still failed to dream, then a priest generally slept by him and did the dreaming by proxy. Deceit could only be the natural sequence of such a *modus operandi;* and we see this clearly in those cases where the priests actually used to go to the trouble of disguising themselves during the night, and so persuade the patient that he had dreamed or had seen a vision. As all these plans must have quite failed to bring relief in true organic disease, it is probable that the patients would then seek the aid of the second class of healers, viz., the Asclepiadæ, or real doctors. These passed as the descendants of Asclepius; and so important was the direct descent supposed to be that later on it was found expedient to construct a genealogical tree for Hippocrates, showing that he was descended directly from the divine Asclepius. This idea of divine descent was convenient, and brought gain to the practitioner and respect for his teaching. It must, however, have been abused, for there was nothing to prevent anyone from passing as a branch of the family. It was probably for this reason that there came to be formed a kind of guild, or society, of medical men, which not only contained the so-called true descendants, but also pupils and others who had real medical knowledge. The guild itself is what we now understand by the Asclepiadæ. They settled near the temples (the Asclepiea) because there was most material there, since patients came to consult the deity first, and no doubt, having got little satisfaction, they turned to the true medical practitioners. There does not, however, appear to have been any unfriendly rivalry between the priests and the Asclepiadæ, for each was a mutual benefit to the

other. There being plenty of material, clinical instruction was given and students were trained, and these latter were enjoined to keep their knowledge to themselves, and later on were received as practitioners on taking the oath so well known in connection with the name of Hippocrates. In such a manner was Hippocrates trained when a young man.

It may be asked, Did the Asclepiadæ practise outside the boundary of the temples? Though Schultze thinks that they did not, it is highly probable that they did, if we consider Hippocrates in later times as an example. Anyhow, if the Asclepiadæ did not practise away from the temples, then there existed other doctors who practised, but who did not belong to the guild. These physicians, accompanied by their assistants and pupils, visited patients at their homes, or saw them at the Iatreion attached to their residence. The Iatreion would appear to have corresponded to the Poliklinik that German surgeons so frequently have attached to their private hospitals in German cities. Here they receive patients and teach students, and, if necessary, operate on the patients. So in the days of Hippocrates the physicians and surgeons saw patients at the Iatreion, and, if necessary, operated on them, and in some cases allowed them to remain as residents of the institution. We may say that this was also the precursor of the modern hospital, and as nowadays cleanliness and order are thought so essential, so in these past ages some attention was paid to these subjects. "The napkins must be kept clean, be of soft texture, as also the linen used for the eyes, and the sponges for the wounds: for these things are of great importance for the healing."

Besides those practitioners who visited patients at their homes, there were midwives who attended women during their confinement. According to Plato, the midwife had to ad-

minister medicines, and to give remedies to hasten labour, to tie the cord and cut it, and to provoke abortions. They also treated women for gynæcological diseases, for the midwife is mentioned several times in the Hippocratic works on gynæcology, and in the "Hippolytus" the nurse tells Phædra that if her disorder is one that cannot be revealed to men, then there are women who understand such matters.

The third group to be considered comprised the philosophers.

They became connected with medicine by reason of their investigations into disease and into anatomy. They were not content to merely put forward theories; they wished to ascertain by a close investigation into the structure of animals whether they could get any nearer to the origin of things. Some of these philosophers became actual medical practitioners, whilst others were content to be investigators in comparative anatomy.

There can be little doubt that medical science gained by its association with the philosophers, not because they added much to the knowledge of surgery or pathology, but rather in a general way, by bringing their clear, far-seeing intellects to bear on obscure points, they enabled the actual practitioners with the facts before them to gradually draw true and proper conclusions. They, in fact, rather aided the science than, say, the art of surgery, and by their dissections added many new facts to comparative anatomy; and, lastly, they helped to found a proper nomenclature of diseases.

The fourth group that must be mentioned comprises those who advocated the gymnasium as a means for restoring health. So important was physical training in the Greek mind that the education of a Greek youth was divided into three parts—grammar, music, gymnastics. It will be easily

perceived how admirably the Greeks were adapted to bring gymnastic exercise forward as a therapeutic agent, and by exercise, massage, and other branches of their art to obtain results with which we now are familiar since the adoption of massage and the Swedish movements in modern times. Massage is mentioned by Soranus as being employed in gynæcological cases; thus, in dealing with amenorrhœa (cap. 48), he not only mentions general massage by a specially-trained rubber, but also alludes to massage of the uterus itself, in order to strengthen that organ.

## CHAPTER V.

### HIPPOCRATES.

Hippocrates is the first writer among the Greeks, whose works we possess, who deals with gynæcology. The passages contained in his genuine works are few, and are of little importance; but in the Hippocratic collection there are four books which are devoted to the diseases of women, and in these we have the first and oldest complete treatises on gynæcology.

Hippocrates is supposed to have been born about 460 B.C., and was a contemporary of Plato, Socrates, Xenophon, Pericles, Æschylus, Sophocles, Euripides, Aristophanes, and Herodotus; he thus lived at a time when the most brilliant Greek minds were giving forth to the world their immortal ideas. As stated in a previous chapter, he is said to have been a descendant of Asclepius; his father being a physician, he probably received his first instruction in medicine at the Schools of Cos. He visited many cities, practising his profession, and no doubt teaching students, he himself being content to become a student and learn philosophy from Georgias and Democritus, the latter being not only a philosopher, but a physician and a scientist. After travelling for some time, he returned home and practised at Cos; and having access through his descent to the clinical records of

the Asclepieum at Cos, he was enabled to make notes from the collection, which he afterwards used in composing his work on Prognostics. After Hippocrates began to practise, his fame spread far and wide, and he was frequently called on to go considerable distances to perform operations and give advice in difficult cases. This goes to show that the medical practice of the Asclepiadæ was not confined to the neighbourhood of the Asclepieum. Adams thinks that it was on account of the wandering life which Hippocrates led, and from the fact that he no doubt was a consultant for many years, that he was prevented from giving much time to obstetrics and gynæcology.

*The Hippocratic Treatises.*—Among the works that have been handed down to us bearing the name of Hippocrates, there are some which are undoubtedly the "Genuine Works of Hippocrates," while there are many which are definitely proved, by ancient and modern authors, not to have been written by him. Of the sixty odd works comprised in the collection, probably about thirteen were written by Hippocrates at various periods of his life. Of the remaining works, some were written by authors anterior to Hippocrates; others by his disciples during his life or immediately after his death; while others were even composed at a later date. With regard to the "Genuine Works of Hippocrates," we shall see in examining them that they contain only a few passages which deal with the diseases of women; while, on the other hand, among the Hippocratic collection we shall find a particular series of works, supposed to have been written after the death of Hippocrates, but previous to the time of Aristotle, which deals specially with gynæcology. The series is written, according to Littré, by one author, and deals with "Generation," "On the Nature of the Infant," "On Disease,"

"On the Diseases of Women," "On the Diseases of Young Women," "On Unfruitful Women." The name of the author of this series has not been ascertained; according to Erotion and Galen's references to these works, it would appear that they considered Hippocrates himself as the author; but modern authorities reject this theory. The works on the diseases of women are certainly among the most valuable on gynæcology that have been handed down to us by ancient authors, and we purpose to examine them minutely later on; for the present we shall merely refer to the few passages in the "Genuine Works of Hippocrates" before we take our leave of him.

### The Gynæcology contained in the "Genuine Works of Hippocrates."[1]

He appears to have been acquainted with the shape of the uterus, and imagined that it acted in such a way as to suck and draw juices from various parts of the body ("Ancient Medicine," 22). In the treatise on "Air, Water, and Places," he says that the drinking of unwholesome water will cause dropsy of the uterus. Adams, commenting on this passage, says: "It may appear singular that hydatids of the womb should be particularly prevalent in the case of women that drink unwholesome water from marshes, and yet our author's observation is confirmed by a modern authority, as quoted by Coray."

It is evident that these authors have mistaken hydatidiform degeneration of the ovum for hydatid disease of the uterus, and that Hippocrates does not refer to the latter disease in the passage alluded to, but to the former disease.

[1] Adams, "The Genuine Works of Hippocrates." London, 1849.

In "Airs," he remarks that calculi do not form so readily in women, for in them the urethra is short and wide, so that in them the urine is easily expelled.

In the "Epidemics," B. I. vi., he says that in some fevers women have pains in the uterus and menstrual disorders.

In the "Epidemics," B. I. iv., he alludes to the use of pessaries and suppositories in puerperal fever, and describes a case of miscarriage followed by death on the seventh day (B. III., Case xi.).

"Aphorisms," V. 28: Fumigation with aromatics promotes menstruation, and would be useful in many other cases, if it did not occasion heaviness in the head.

V. 32: Hæmoptysis in a woman is removed by an eruption of the menses.

V. 36: When the menstrual discharge is of a bad colour and irregular, it indicates that the woman stands in need of purging (uterine?).

V. 43: If erysipelas of the womb seizes a woman with child, it will probably prove fatal.

V. 47: If the portion of the uterus seated near the hip joint suppurate, it gets into a state requiring to be treated with tents.

V. 50: If you wish to stop the menses in a woman, apply as large a cupping instrument as possible to the breasts.

V. 51: When women are with child, the mouth of the womb is closed.

V. 54: When the mouth of the uterus is hard, it is also necessarily shut.

V. 58: Strangury supervenes upon inflammation of the rectum and of the womb, etc.

VI. 29: A woman does not take the gout unless her menses be stopped (*vide* Garrod and Haig).

"Hæmorrhoids," 7: Hæmorrhoids in a woman are treated by fomentations.

In the Oath this sentence occurs: "I will not give to any woman a pessary to produce abortion."

The above are the only passages in the "Genuine Works" which refer to gynæcology, and, as we see, they are of very slight importance.

The question may be asked, How is it that in the works of a man of such extensive medical knowledge as Hippocrates we have so little that bears on gynæcology? The answer will fall under one of the following headings: (1) That Hippocrates was too busy with his general work to pay any attention to a special subject such as gynæcology; (2) that he was well versed in, and wrote on, all branches of medicine and surgery, and that he did write on gynæcology; (3) that those who compiled the Hippocratic Collection abstracted all the observations on gynæcology from the "Genuine Works," and placed them in the works devoted to women's diseases.

The most probable explanation is that, while Hippocrates had some slight general knowledge of gynæcology, he had not studied the subject deeply, inasmuch as we find only a few stray observations in his works; and particularly does this apply to his "Aphorisms," a work into which he sought, in his mature years, to put his conclusions on every branch of medicine. Now, in the fifth division of his "Aphorisms" he devotes the paragraphs from No. 28 to 62 to comments on obstetrics, and incidentally mentions once or twice the diseases of women in a few paragraphs, all of which appear in the non-genuine works, and may only be interpolations in the genuine works. Is it likely that in a work which is justly considered one of the most remarkable ever written by a single individual—is it likely, we say, that he would willingly

have withheld his knowledge of gynæcology, if he had had any, from a work which he wished to be considered a complete commentary on medicine?

### The Gynæcology contained in those Works of the Hippocratic Collection which are not considered Genuine.

The works which we have now to consider are in all probability by the same author. The first, entitled Περὶ γυναικείων, is in two books, the first book consisting of 110 chapters, whilst the second contains 102. The second work, Περὶ ἀφόρων, on Sterility, consisting of thirty-six chapters, may be taken as a continuation of the two preceding books, the opening sentence stating that the author has already dealt with the diseases of women in the preceding works. The fourth work, Περι γυναικείης φύσιος, consisting of 109 chapters, appears to be composed of extracts from the books "On the Diseases of Women," though both Littré and Daremberg[1] think that this work may not be framed from the latter work, and Ermerins attributes it to Euryphon Cnidius. We shall now proceed to take extracts from these four works, placing them under several headings, so that they may be compared more readily with the extracts to be made from later authors:[2]

*Anatomy.*—Neither Hippocrates nor the author whose works are now under consideration have left us any remarks on the anatomy of the female genital organs; nor, indeed, are the genital organs mentioned in the fragment Περὶ ἀνατομῆς contained in the collection.

Our author has some idea of the length of the uterus, for

[1] Daremberg, *loc. cit.*, p. 127.

[2] The following abbreviations will be used to indicate the particular work from which the extract is made: "Diseases of Women," D. O. W.; "Sterility," S.; "The Nature of Women," N. O. W. The edition of Littré is the one quoted from.

in giving instructions concerning the dilatation of the cervix he directs that the dilators are to be introduced for a distance of four fingers' breadth, which would be 2·8 inches.

Whether our author really comprehended the true position of the fundus is not clear. The chapters on displacement of the uterus appear to us to show that the position of the fundus was often guessed at from the position of the cervix, and that the absurd notions that existed about the uterus being displaced up to the liver and to the heart really arose from knowing nothing of the bimanual method of examination. The introduction of the metal sounds and wooden dilators must have shown them at times that the uterus varies in position, and they could thus form ideas of the position of the fundus; but even granting this, unless they knew what was normal, they could come to no correct conclusion as to what was abnormal. Adams says in one of his commentaries on Paul: "Bernard justly remarks that if the ancients had not been familiar with *inspectiones cadaverum*, they could not have described the diseases of particular parts of the uterus so accurately as they have done." Puschmann says: "Speaking generally, they appear to have confined themselves to opening the thoracic and abdominal cavities; and the position and form of the contained organs are fairly correctly described." If we grant that our author and his contemporaries enjoyed the privilege of making *inspectiones*, then the normal position occupied by the uterus must sooner or later have become known to them; we, at all events, are certain that Herophilus dissected the human uterus at a somewhat later period than the works we are dealing with.

*Physical Examination of the Pelvic Organs.—Inspection* and *palpation* of the abdomen and the organs of generation were practised to some extent. In speaking of retention of the

menstrual fluid, pain and pulsation of the hypogastric region are mentioned, and "pain on palpation" (D. O. W., 1, 2, 170). The liver and spleen are described as being palpated in another of the Hippocratic works.

*Vaginal examinations* were made not only by the medical man, but also by the midwife: "after the fumigation and the bath, the midwife introduces her finger and straightens and corrects the orifice of the uterus" (N. O. W., 40). The patient herself is also advised to practise examinations on herself, so that she may become familiar with the state of the os in sterility and other conditions (S., c. i.; Littré, 213); "the patient during the fumigation should examine the os with her finger if she can reach it" (D. O. W., ii. 133).

Neither the bimanual nor the rectal examination is mentioned by our author.

*The Position of the Patient.*—During treatment the patient in some cases lay on her back, with her feet elevated and her thighs separated (D. O. W., 144). In other cases she lay on her side. Thus, in treating a case of displacement of the uterus soon after labour, "the woman will lie on the opposite hip to the displacement" (N. O. W., 25). In other cases the foot of the bed was raised (D. O. W., 149); or the patient's legs were crossed, the one thigh over the other; or in cases of prolapse the body of the patient was attached to a framework, by which means she was inverted, and succussion was practised (N. O. W., 5).

### Therapeutic Agents.

*Instruments used in Examinations.*—The speculum is not mentioned by our author, and we have no descriptions which will enable us to determine whether retractors were used in order to aid the insertion of the dilators into the os, or for

inspecting the cervix. Nevertheless, we may presume that the vaginal speculum was in use, since Hippocrates mentions that the ulcerated parts of the rectum were examined by a speculum;[1] and Galen, in his "Explanatio Vocum Hippocratis," in defining *κατοπτήρ*, says that it is the instrument by which the seat is dilated, while *διόπτρα* is the instrument by which the female parts are inspected.

*Sound.*—Sounds made of lead were used for opening the mouth of the womb previous to fumigation; when it is necessary to make a fumigation, "the patient will make use of the sound of lead, so that the uterine orifice will be open for the fumigation" (D. O. W., i. 11). The leaden sound was also used to straighten or rectify the deviating uterus; thus, in speaking of lateral displacement of the uterus, the orifice is described as being deviated and in close proximity to the side of the pelvis; "after the fumigation the woman with her finger carries the orifice of the uterus away from the ischium, and then straightens it with rods of pine-wood or lead (*ὅταν δὲ ἀποστήσῃ, ἐξορθοῦν τοῖσι δαιδίοισι καὶ τῷ μολιβδίῳ*).

*Uterine Dilators.*—Dilators made of pine-wood are described at considerable length (D. O. W., ii. 133), while mention is also made of some dilators composed of lead and of tin (S., 217). After dilating the cervix, a hollow leaden pipe was used to keep up the dilatation (D. O. W., ii. 133). The finger is referred to as a dilator (N. O. W., 37).

*Uterine Catheters.*—These were used for washing out the uterine cavity. The end of the tube will be polished like a sound and made of silver. A perforation will be made in the side, having beyond it the small tip of the catheter. There will also be other perforations, which will be placed

[1] "On Fistulæ," c. 3.

at equal distances on each side of the catheter throughout its length; these holes will not be large, but narrow. The extremity of this injection-pipe will be solid—all the rest of it hollow. To the pipe will be attached a bladder (of a sow) which has been first well scraped. Then place the milk of a mare in the bladder, first taking the precaution to close the holes in the injection-pipe with a linen rag. Having filled the bladder with the milk, it is then tied so as to close it, and, the injection-pipe having been placed in the uterus (the rag first being removed), the bladder is pressed and the uterus washed out (S., 222). A number of formulæ for injections are given (c. 80, D. O. W.).

Besides the uterine irrigations, the uterus was treated by infusions (ἔγχυτον), which, according to Littré, appear to have differed from the injections (κλυσμός) in consistence. It seems to us that these infusions were really *poured* into the vagina, the patient being in a position that prevented the escape of the fluid from the vagina for some time, and by this means some of the fluid would enter the uterus. Thus, in treating of abortion, with retention of the ovum, the patient is placed "with her feet at a higher level than her head, and the infusion is made to enter the uterus; the woman lying down meantime prevents the fluid escaping" (D. O. W., i. 78).

*Vaginal irrigation* was largely used in all vaginal and uterine diseases, and is mentioned very frequently by our author.

*Sitz-baths* are mentioned in several passages. Thus, in speaking of aphthæ of the genitals, he says: "If strangury supervenes, a sitz-bath of decoction of roses or of briars, of myrtle or of olive-tree or sage, is recommended" (D. O. W., ii. 210).

*Rectal injections* are mentioned several times.

*Fumigations* were very extensively employed in every class of vaginal and uterine disease. The author frequently refers to the notion that the uterus was attracted by fragrant odours and repelled by disagreeable ones. The technique of fumigation is well shown by the following extract: Take a vessel that holds about 4 gallons (δύο ἑκτέας), and fit a lid into it so that no vapour can escape from it; next pierce a hole in the lid, and into this aperture force a reed about a cubit in length, in such a way that the vapour in the vessel cannot escape along the reed. The cover is then fixed on the vessel with clay. Then dig a hole about 2 feet deep and sufficiently large to receive the vessel, and burn wood until the sides of the hole become very hot. After this the next step is to remove the wood and the larger pieces of charcoal which have the most flame, but we should leave the ashes and cinders. When the vessel is placed in position and heated, and the vapour begins to issue out, if it is found to be too hot we should wait a time; if, however, it be of the proper temperature, the reed should be introduced into the uterine orifice, and the uterine fumigation be made. We should be careful to keep the patient covered, lest she should take a chill.

Before the heating of the vessel is begun, the materials to be used for the fumigation are placed in the vessels with some water. During the fumigation the patient, if she can reach her os, should examine it to notice its condition. The fumigation was supposed to fill the uterus with vapour, to open its orifice, and sometimes even to rectify its position (D. O. W., ii. 133); in fact, the fumigation was evidently a very favourite method of treating nearly all uterine diseases. The ancients regarded it as a most important step in the

treatment, and it was in their eyes as important as the antiseptic douche is to us nowadays.

Fumigation was also used for diagnostic purposes (D. O. W., 146).

*Fomentations* were in use. In treating of acute metritis after abortion, our author says: "In dealing with such a case, when pains are present bathe the patient with a quantity of hot water, and apply hot fomentations over the seat of the pains" (D. O. W., i. 63).

*Cataplasms* were also in use in our author's days. "If, on account of a watery flux (from the uterus), the lower portion of the abdomen is painful, then mix honey with linseed-meal, and make a good cataplasm for the belly" (D. O. W., ii. 198). Various receipts for cataplasms are given in N. O. W., 102.

*Cautery.*—This is referred to in the operation for opening of a pelvic abscess above the pubes (D. O. W., 134).

*Anointing* portions of the body with grease in case of pain and in treating uterine affections was practised (D. O. W., ii. 210).

*Bleeding* is mentioned by our author in a case where labour should be accelerated (D. O. W., i. 77), and again in dealing with sterility (S., 241).

*Cupping* is described as being used after the reduction of a prolapsed uterus, the cup being applied to the haunch (N. O. W., 5). It was also applied below the breast in case of menorrhagia (D. O. W., ii. 110).

*Pessaries.*—The pessary (*προσθετόν*) is mentioned in almost every chapter of these works. They were the stock remedies in vaginal and uterine disease, and were prepared by rolling a piece of lint or wool into an oblong-shaped body, and then applying the medicinal substances to the surface of the lint. The lint or wool was also occasionally soaked in the ingredients.

To the pessary a string was attached, so that it might the more easily be abstracted. The pessaries mentioned by our author were the "emollient," to be used in reducing inflammation in and around the womb and for softening the cervix. An example is one composed of myrrh, 1 part; pitch, wax, and goose-grease, 2 parts (D. O. W., ii. 158). The "astringent" pessaries were used for restraining female discharges. An example is sumach with honey in dark wine (N. O. W., 29). The "purgative" pessary was for ridding the uterus of discharges or the products of conception, and for producing the menstrual discharge. Pessaries were also in use for procuring abortions, and were made of cantharides, elaterium, colocynth, etc. Hippocrates in his Oath forbids the use of such. Pessaries were also used to enable the woman to conceive. Thus a pessary would be placed in the vagina in the morning, another one later on in the day; then, after the evening meal, the patient would be douched, and would then retire to rest.

Pessaries are mentioned as being placed in the uterine cavity (D. O. W., ii. 133).

Before a pessary was applied, the patient generally bathed herself and had a fumigation, and then bathed herself again after the pessary was removed (D. O. W., ii. 163).

Besides the various formulæ scattered throughout these works, our author has collected innumerable formulæ into special chapters, such as 84 and 205, D. O. W.

*Suppositories.*—The *βάλανος* is not very frequently mentioned, but it was in use for the bowels. Reference is made to it in N. O. W., 30, D. O. W., 92, 130, and in a few other places. It was made by mixing the ingredients and rolling them into an oval ball, while in other cases wool was saturated with the ingredients (D. O. W., ii. 177).

*Tents.*—These were made of linen or raw flax rolled into a narrow, rod-like body, and were used for keeping open a wound such as would be made in operating on an empyema.

Our author mentions tents made of raw flax (*μοτοῦν ὠμολίνῳ*), which were to be introduced into the mouth of the uterus in treating a case of induration of the cervix and stenosis of the os. The tents were to be three in number—the first small, the second a little larger, and the third as large as the little finger, and the length to be the breadth of four fingers (2·8 inches). They were to be rubbed with goose-grease and applied after an aromatic fumigation, in order that they might slowly dilate the cervix (D. O. W., ii. 157).

*The mechanical pessary* was represented by a pomegranate split into two halves, one half being introduced into the vagina in case of prolapse of the uterus (D. O. W., 142).

### 1. Peritoneum and Connective Tissue.

*Parametritis and Pelvic Abscess.*—In dealing with a case of lateral displacement of the uterus, the author says: "If the uterus is in contact with the ischium and presses on it, an induration will form in the flank. There will be pains in the lower part of the abdomen, and these extend to the flank, the loins, and legs. There will be abdominal distension and the formation of pus, while the wound that results has need of tents, and the patients die from the diarrhœa that supervenes unless the knife or the cautery be used. The treatment is by fumigation, purgatives, and hot baths, while the patient after an interval endeavours to restore the mouth of the uterus to its proper position by pressing it towards the sound side" (D. O. W., ii. 134).

In dealing with retention of the menstrual fluid, the author says: "In some cases, after suppression for two or three

months, the retained fluid becomes purulent, which fact is recognised by the intense pain and pulsation in the hypogastric region, and by pain developed on palpation. Sometimes the pus is evacuated by the front-passage, and ulceration of the womb may be the result. If the pus does not escape by the vagina, it may find its way to the groin and be there discharged. In other cases, after a few months' suppression, the menstrual fluid may be carried towards the flank, and may form a tumour, without suppuration, above the groin, the swelling becoming large and red. These have been incised, but this is a dangerous practice, unless pus has formed in the tumour" (D. O. W., i. 2).

*Pelvic peritonitis*, apart from general peritonitis, is not mentioned by our author, nor are diseases of the *ovary and Fallopian tubes* referred to.

### 2. Affections of the Uterus.

(*a*) *Stenosis and Rigidity of the Cervix.*—When a uterus is displaced towards the ischium, unless the deviation be corrected we shall find that displacement of the cervix will lead to the os uteri becoming more or less closed and the cervix contracted. The treatment is, to give fumigations, as described above, which were supposed to open the uterine orifice somewhat; after this the patient bathes herself and eats suitable food. This preliminary treatment is repeated for five or six days, until the operator thinks the cervix is in a fit condition for dilating it. This is done in the following manner: After the fumigation we must endeavour to introduce pessaries (*τῶν προσθετῶν*) made of pieces of very greasy pine-wood; these should be smeared with oil, and ought to have a length of six fingers' breadth. There should be five or six of these dilators, each ending in a point, and

each one should be a little larger than the preceding one, the largest being of the thickness of the index-finger, and of much the same shape as a finger, being, in fact, small at the distal extremity, and gradually becoming larger towards the proximal end. The piece of wood forming the dilator should be as smooth and as round as possible, and should have no splinters. The technique of dilatation is as follows: Take the smallest dilator first, and when it has been placed in position see that the patient keeps very still, lest the pine rod slip out. At first we should only introduce the point gradually by turning the dilator round and pushing it at the same time. Having introduced the point, the woman must be careful lest it slip out, and we then push the dilator into the uterine cavity for a distance equal to four fingers' breadth (2·8 inches). After the first rod has been introduced it should be withdrawn, and replaced by a larger one without delay, while the mouth of the uterus is still open. It is also necessary to have a leaden tube similar in shape to the largest dilator, but hollow, so as to be able to contain a medicinal substance. The width of the tube will be about that of a probe that is used for wounds; but, in order that the mouth of the tent (μοτοῦ) may be smooth and do no damage, the end of it should be prepared in a similar fashion to the end of the dilators. When the leaden tube is prepared it is filled with ground mutton-fat. This done, the dilator is withdrawn, and replaced by the leaden tube. If, however, when the leaden tube is placed in the uterus it causes a burning sensation, it is replaced by a pine dilator, the leaden pipe being placed in the meantime in cold water, and then replaced in the uterus. Something must always be kept in the uterus during the treatment. During the daytime the pine dilator does well, while at night-time the leaden one is to be used. If the woman happen by chance to

displace the tent, she must immediately replace it. If, in dilating the uterus, we find that the pine dilators are too large to enter the uterine orifice, we must use smaller ones. In those cases where the os is not open, then fumigation must be resorted to until the uterus is brought to a fit condition.

When the uterus is sufficiently dilated, two pessaries are prepared, each of about the size of an olive, and if of resin, etc., they are to be dipped in rose-oil before being introduced into the uterus, so as to prevent them from sticking when being introduced into the uterine cavity. Before and after introducing the pessaries the patient bathes herself (D. O. W., ii. 133).

In another passage the author says that dilatation of the cervix is to be done with pine rods or leaden pipes (τοῖσι μολιβδίοισι)—(D. O. W., i. 13), while sounds of tin and lead are also mentioned (S., 217).

*Induration.*—In treating of induration of the uterus, the tissues round the orifice are described as hard, and the orifice itself becomes closed. After using fumigations and emollient pessaries to soften the cervix, a tent of raw flax is introduced into the cervix, and after this has dilated the canal, a second and larger one, and then a third one, is introduced (D. O. W., ii. 157). Obstruction to the uterine orifice is mentioned in c. cxlvi., D. O. W.

(*b*) *Laceration and Erosion of Cervix.*—If the uterus is gaping contrary to nature, the periods are more abundant, viscid, and come more frequently; the sperm is not retained, for the orifice, being in a gaping condition, is not capable of retaining the sperm. The patient suffers from pains in the lower part of the abdomen and the loins. The treatment is by pessaries, astringents, and fomentations with a sponge on

the regions below the level of the umbilicus (D. O. W., ii. 166).

If the uterus becomes of a scirrhous nature, the orifice is rugged, and this can be detected by a vaginal examination (D. O. W., 155).

If clots of blood form in the uterus, the orifice becomes as though full of grains of fitch (N. O. W., 42).

During menstruation phlyctenulæ (φλύκταιναι) may develop at the orifice of the womb (D. O. W., ii. 173).

(*c*) *Metritis.*—If the uterus be inflamed, the menses are suppressed and the cervix is closed. There is high fever and delirium and an offensive discharge. If the patient is young, she vomits anything she may eat. There are pains in the lower part of the abdomen and in the loins, fainting, and shivering of the whole body. The belly is sometimes hard, sometimes soft: it rises up and becomes puffed out, and the woman appears to be enceinte; but sometimes the swollen belly appears to be as though hollow. The author then goes on to remark that the abdomen becomes filled with water, and the periods become scanty and morbid. The feet swell at the ankles. The treatment is by purgatives, administration of uterine fumigations, passage of the leaden sounds, which are to be washed in warm water before being inserted into the cervix, and after passing these an injection is administered. Three days are now to elapse, and then an injection of vinegar is given to the patient; and if the disease still persists, drugs which evacuate water from the uterine tissues are to be administered (D. O. W., ii. 169).

The author remarks in another place that if a vaginal examination is made while the patient is suffering from metritis the disease is aggravated and the parts are irritated (D. O. W., ii. 171).

Metritis after an abortion is described thus: If the womb becomes ulcerated, both blood and pus are discharged; there is a strong odour, acute pains in the loins, groin, and lower part of the abdomen. The pains gradually ascend from the flanks to the sides and the shoulder-blades, and sometimes they reach to the clavicular regions, and there is intense headache and delirium. After a time the woman swells and grows weak, faints, and is feverish and chilly. Her legs especially become swollen. The disease occurs after an accouchement in which a woman aborts, and the fœtus is found to be putrid, and the lochia do not appear, and the uterus is very hot to the touch; it also may occur after discharges which are acrid and bilious and which corrode.

If called upon to treat such a case while the pains are present, just bathe the patient with much hot water, and apply hot fomentations to the painful parts. If the woman is strong, make a uterine injection. The ulceration is to be treated with oxide of lead, gall nuts, myrrh, calcined Egyptian alum (D. O. W., i. 63).

In the following chapter the author states that the condition above described may be produced if the membranes remain after labour, or it may occur after an abortion, or even spontaneously. He advises that the ulcerated portion of the cervix should be washed with warm water, and then cleaned with a piece of soft linen or sponge dipped in warm water; after this a sponge should be dipped in wine and the ulceration treated with it; then an ointment is to be applied, and later on a fumigation (D. O. W., i. 64).

*Chronic metritis* is described in the following way: If the uterine orifice is open, the periods are more abundant and abnormal, more watery and prolonged. If the morbid condition continues, you will find the orifice partially opened, the

uterus itself being in an adynamic (ἀδυναμίη) condition from the effects of the hæmorrhage. The uterus is light but without tone, and it falls, while its ligaments become relaxed. Pains are felt in the lower part of the abdomen, flanks, and loins. Such a condition may follow after an accouchement. The treatment is by sitz-baths, injections, fumigations (D. O. W., ii. 167).

(*d*) *Displacements of the Uterus* (D. O. W., xi. 137-142).—In these chapters various displacements of the uterus are mentioned, such as lateral displacement to the right, displacement to the left, and to the front, so as to press on the bladder, and to the seat (ἕδρην). No directions, however, are given to instruct the reader how these various displacements are to be diagnosed, and considerable doubt exists in our mind whether many of these displacements were not described haphazard. Certainly some of them were imaginary, such as displacement of the womb to the liver and heart, as described in the chapter on Uterine Suffocation (D. O. W., i. 7). In short, we have no evidence that the bimanual examination was practised by our author, and therefore we are inclined to think, as stated above, that though the leaden sounds and the dilators must have given them indications of the position of the fundus, in many cases the supposed position of the fundus was really guessed at from the position of the cervix.

Again, it is abundantly clear that a pelvic suppuration occurring to the right or left represented frequently to our author a supposed displacement to one or other side; likewise suppuration above the pubes indicated to him an anterior displacement; thus, he says if the uterus is in contact with the bladder, and prompt solution does not occur, the suppuration supervenes at the place where the uterus is adherent

(D. O. W., 137). The effect of suppuration, as we know now, is frequently displacement, not *vice versâ*. In c. 138 the author states that any cause is sufficient to displace a uterus, if that uterus has any lesion; and the most likely causes of displacements are, he says, cold to the feet and the loins, dancing, winnowing, breaking sticks, or whilst running up or down hill.

In c. 139 latent obliquity of the uterus is referred to. If after a labour the uterus turns to the right, the lochia do not flow, and there is pain in the lower part of the abdomen and in the flanks; while the right leg becomes heavy, engorged, and shakes. On making an examination, the uterine orifice can be touched, and the uterus itself is found to be smooth and even. If, on the other hand, the uterus leans to the left, we shall have acute and intense pains in the loins, flanks, and legs, and the woman is lame (c. 140). Fumigations are the chief remedies advised.

Lateral displacement with pelvic abscess is described in c. 134 (*vide ante*).

The following is from c. 131: If the uterus comes to lie in the middle of the loins, there is pain in the lower portion of the belly, the legs are drawn up, and there is pain in the hips, and when the patient goes to stool she experiences sharp pains and she has difficulty in defecation; she passes her urine in drops, and she may faint. The treatment is to inject hot oil into the uterus by means of a cannula fixed to a bladder; hot baths, vapour baths, and fumigations are employed, until such time as the uterus is restored to its proper position.

C. 132: The os uteri may be displaced towards the hip (ἰσχίον). We must first use a fumigation, and after this introduce the finger and push the uterus from the hip, and

rectify it with small pine rods or leaden sounds. When it has regained its proper position, and the os is patent, treat with pessaries, etc.

(*e*) *Prolapse of the Uterus.*—In c. 142, D. O. W., the author recognises partial prolapse of the uterus, *i.e.*, when the uterus approaches the mouth of the vagina. In such a case fœtid fumigations are recommended; for the ancients thought that the uterus was like an animal, and that fœtid odours repelled it. In the next chapter the next degree of prolapse is dealt with. When the uterus comes to be external to the genital parts there is inflammation of the vulva and seat; the urine is passed drop by drop and very frequently, and it irritates the surrounding parts very much. Fumigations are recommended, and the foot of the bed is to be raised.

In c. 144, D. O. W., complete prolapse is dealt with. In complete prolapse the uterus is placed outside the vulva, and looks like a scrotum. The patient has pains in the lower parts of the abdomen, in the loins, and in the groin. The treatment consists in making cold applications to the genital parts, cleansing the prolapsed parts, and washing them with wine, the patient remaining in bed with the feet raised and her thighs apart. Sponges are applied, which are kept in position by bands passing round the loins; the patient in the meantime eats and drinks as little as possible for seven days. If after this course of treatment reduction is obtained, all is well; otherwise the side of the uterus is incised, then bathed and anointed with cerate; the patient is fixed by her body to a ladder with her head lower than her feet, and then by manipulation the uterus is replaced. After this release her and fix her thighs, the one over the other, and let her remain thus for a day and a night, giving her a little cold ptisan to drink, but nothing else. Next day she is to lie and rest on

her hip, and a large cupping-glass is to be applied for a considerable time, but we are not to abstract any blood. The patient is left resting for seven days, during which time she has only ptisan; if, however, she is very thirsty, she may have a little water to drink. The remainder of the chapter is devoted to diet, fumigation and injections, and the patient is recommended to wear a diaper (*σφενδόνη*) when she begins to move about.

C. 149, D. O. W.: When the uterus does not remain in its proper place, but goes from side to side, it occasions pain. When the patient is in bed on her back, the uterus remains in place, but if she rises it slips down. Rest, astringent fomentations, and the raising of the foot of the bed, are steps to be employed in the treatment. Then we should take a pomegranate, its shape being chosen to suit the parts, and we should divide it down through the umbilicus into two halves. Then warm it in lukewarm wine; after this thrust it as far as possible (into the vagina), and then bind the patient with a large sling bandage, which restrains it (the pessary) below and prevents it from slipping out; and so it can fulfil its office.

Littré calls attention to the fact that in four passages—c. 144, c. 248, D. O. W.; c. 5, N. O. W.; and c. 5 in the work on "Excision of the Fœtus"—the author, in speaking of prolapse of the uterus, recommends that the sides of the uterus should be incised. Thus, the directions in the work on "Excision of the Fœtus" are: "Incise the uterine tissues obliquely, following its outline; then wash it with linen in order to excite inflammation in it." Littré asks, What were the parts incised? In the first passage they are designated by the word *λέγνα*, a word which Galen, in his Glossary, translates as "the sides of the orifice of the uterus." In the

second and third passages the words are ἄκρας τὰς μήτρας, which signify the side or the extremity of the uterus; and since in prolapse the uterus descends enveloped at the exterior by the vagina, the expression can be taken to apply to the sides of the orifice. In short, in four passages the terms are vague. What was the object of the scarifying? The only one that we can see is that perhaps the author practised it in order to excite adhesive inflammation in the cervical region, and by producing cicatrices endeavoured to keep the uterus in its regular position. In c. 145, D. O. W., the author describes what appears to be inversion of the uterus; he, however, remarks that it is more common in women who have not had children.

*Cancer.*—When we find that the uterus has become hard and projects into the genital parts, and when the groins become indurated and there is fever about the genital parts, then we know that there are indications of a tendency to cancerous degeneration. Clysters are recommended (c. 159, D. O. W.). The subject is dealt with at greater length (c. 133, D. O. W.), and the author says that when cancer is once well formed it is incurable. He, however, recommends fumigations to be tried.

*Diseases of the Vulva.*—Diseases of the vulva are hardly mentioned by our author. Ulceration and aphthæ of the genitals are referred to, while vegetations if in excess are recommended to be excised (N. O. W., 65).

Atresia from ulceration of the labia is referred to, and carcinomatous degeneration of the vulva is mentioned (D. O. W., 39).

*Leucorrhœa.*—This is referred to in several chapters. In c. 24, D. O. W., leucorrhœa is described as the flowing away of the seed of the woman; and Galen points out that this gave

rise to the term gonorrhœa (γόνος, ῥέειν). In c. 15, N. O. W., leucorrhœa (λευκός, ῥόος) is described as a flux similar to the urine of the ass, and is attributed to the diseased state of the humours of the body, the fluxion taking place from the uterus. It is also referred to in cc. 116-119, and a treatment is recommended in which the patient drinks enormous quantities of milk every day.

*Metrorrhagia* is dealt with in several chapters—D. O. W., 110, 112, 113, 115—and it is noted that it occurs after abortion, but no mention is made of any treatment resembling curettage for its relief.

*Hæmatometra, Pyometra, Hydrometra.*—A woman's periods are suppressed if the os is closed or deviated, or if there is a constriction at any part of the genital canal. If the periods are suppressed until the sixth month and the woman is not pregnant, then she will die, her symptoms at the time being vomiting, intense thirst, great pain on palpating the womb (which is distended with blood) in the hypogastric region; also there is suppression of urine. In some cases after suppression for two or three months the retained fluid becomes purulent, which is recognised by the intense pain and pulsation in the hypogastric regions, and pain on palpation; sometimes the pus is evacuated by the front-passage, and ulceration of the womb may be the result (c. 2, D. O. W.).

*Hydrometra* is mentioned in c. 178, D. O. W.

## CHAPTER VI.

### THE ALEXANDRIAN SCHOOLS.

At the time of the death of Hippocrates (357 B.C.) Greece had already begun to decline in prosperity. The tide was slowly rising that was to bear Hellenic art and science to Egypt, and the man who was to found the new Athens was already born (356 B.C.). Between the death of Hippocrates and the establishment of the Alexandrian schools over fifty years elapsed, and during that time medical and surgical works were written and medical science still continued to flourish; but of these works we know but little. There is no doubt that through the decline in the fortunes of Greece the development of medicine received a check for the reason assigned by Daremberg, who points out that medicine passed into the hands of those "qui n'avaient pas la force de continuer dans les mêmes proportions l'édifice commencé par les hippocratistes."

Among the writers of this period who are of interest to us may be mentioned the following:

*Diocles Carystius*, who lived, it is supposed, in the fourth century B.C., not long after the days of Hippocrates. Though we have only fragments of his works preserved through other authors, we know that he was held in high estimation. He

was a writer on gynæcology, and Soranus refers to him in his work on the "Diseases of Women."

*Praxagoras* of Cos lived shortly after Diocles, and is of interest to us inasmuch as Cœlius Aurelianus tells us that in cases of intestinal obstruction he advised that purgatives and enemata should first be tried, but if they failed that massage of the abdomen should be practised; and, as a last resource, laparotomy should be performed with the idea of removing the obstruction. If the bowels were incised, they were to be sutured, and if an intussusception was present the intestines were to be restored to their normal relations.

Besides these operations, the kidney was cut down on in cases of suppuration, and paracentesis abdominis was practised. Extensive operations could not, however, be carried out, from deficient knowledge of anatomy, and from the fact that tying the vessels for arresting the flow of blood was as yet unknown, though, apparently, the difference between arteries and veins was recognised by the author of the Hippocratic work "De Articulis," by Diogenes Apolloniates, Euryphon, and Aristotle.

Alexander, the founder of the city that was destined to have such an enormous influence on future learning, was born 356 B.C. His father, Philip II. of Macedon, having been murdered (336 B.C.), the son was called to the throne. He had enjoyed the benefit of having Aristotle for his tutor, and from him he imbibed a love for the sciences, including medicine.

Alexander in the year 334 B.C. prepared for an expedition against Persia; and after a successful campaign against Darius, and along the west coast of Asia Minor, he again attacked Darius, and on defeating him he marched into Egypt, and in the year 331 B.C. founded the city which bears his name,

with the idea of making it the centre of commerce between the old and the new world.

Alexander continued his campaigns, and by his uninterrupted conquests he gradually extended his empire towards India. This fact is of interest in the history of medicine, for it was by this means that the Hindu medical men became acquainted with Grecian medicine, while, on the other hand, the Greeks learned from the Hindu medical men much that was valuable.

Alexander having died (323 B.C.), the problem of who was to be his successor immediately intruded itself. While this matter was being settled, certain of Alexander's generals were sent from the immediate neighbourhood of the strife to govern various provinces as satraps, with full military powers.

Among these generals was one Ptolemy, son of Lagus, and he was despatched to govern Egypt. Here he firmly established himself, and became the ancestor of a brilliant line of Kings, and, in the words of Daremberg, "he did for Alexandria what Pericles had done for Athens."

Ptolemy made Alexandria the greatest commercial city of the world, then turned his attention to literature and science, and founded the Library and the Museum of Alexandria; and these institutions were fostered and extended by the enthusiasm and wisdom of his successor, Ptolemy Philadelphus.

In order to collect books for the library, and in order to have men of culture as teachers in the colleges, anyone who had a work to dispose of or who had brains to teach was welcomed at Alexandria with open arms. It is probably to this desire of having the works of such a celebrated man as Hippocrates that we owe the manufacture of certain of the works in the Hippocratic Collection. With regard to gynæcology, we shall see that it was in the Alexandrian library that Aetius, 800 years later, probably compiled portions

of his excellent work on the "Diseases of Women," which has fortunately come down to us.

At this period no doubt gynæcology flourished, as did all the other branches of medicine; but we have no author whose work has been handed down to us to give us an accurate idea of the knowledge of the times. We know, however, through Galen that Herophilus, the celebrated anatomist, wrote a text-book on "Midwifery,"[1] and that, as he was a teacher of that subject, he was probably also a gynæcologist. Haller says that he was well versed in the anatomy of the genital organs of both sexes, and both Galen and Soranus quote him when dealing with the anatomy of the female pelvic organs.

With regard to abdominal section, we find that this branch of surgery received an impetus because anatomical investigation was pursued with ardour; for not only were bodies handed over for dissection, but actually criminals were made the subjects of dissections, "so that the investigators could study the particular organs during life in regard to position, colour, form, size, disposition, hardness, softness, smoothness, and superficial extent, their projection and curvatures." The outcome of these dissections was that Erasistratus, who shared with Herophilus the honours of the period, deliberately operated on the liver and spleen. "In cases of tumours of the liver he did not scruple to make an ample division of the integuments, and try applications to that viscus itself. He followed the same practice in disease of the spleen." It was during this period that Xenophon of Cos, one of the followers of Erasistratus, first resorted to ligation of the vessels for the arrest of hæmorrhage.

Medicine during the development of the Alexandrian schools became differentiated into three branches: dietetics,

[1] Soranus, c. xlvii., c. l.

pharmacy, and surgery, and specialism took a more definite form.

Among the authors who flourished at various periods of the Alexandrian school were some whose works have not come down to us, but who were nevertheless writers on gynæcology. Thus, Simon is mentioned by Soranus; Athenion, Miltiades, Demetrius, and Xenophon, by other authors.

The Alexandrian school was not without rivals, and the institutions that were founded in Syria and Pergamus soon became celebrated. It was in connection with the latter school that parchment was discovered, for the Ptolemies, disliking the rivalry of the schools of Pergamus, prohibited the exportation of papyrus from Egypt, and so a substitute was found in parchment.

## CHAPTER VII.

### MEDICINE IN ROME.

While the schools of Alexandria continued to flourish and represent Greek science and medicine for hundreds of years, the Roman Empire was gradually approaching maturity. Having thus far been taken up in warlike pursuits, the Romans had paid but little attention to the creation of a literature or to the study of science. Medicine, therefore, did not have a home among the people of Italy previous to the second century before the Christian era; Pliny even says that the Roman people were without physicians for 600 years. This statement must be taken to mean that no regular profession existed, but that domestic remedies were applied by the head of the household, as instanced in the case of Porcius Cato.

It was during the reign of Ptolemy Philadelphus that Rome began to receive ambassadors from foreign Powers, and at the same time luxury was first introduced among the people, and with this luxury came an increase of those vices and diseases which, though not unknown before, now spread rapidly among the people. Here, then, was an opening for a medical man; and we are not surprised to find, about 219 B.C., a Greek doctor named Archagathus setting up in Rome and performing all manner of operations. He was not, however, well

received, and was soon christened Carnifex, or the Executioner.

Next came Asclepiades of Bithynia, about 100 B.C. He had practised at Alexandria, and was a man of considerable parts, and was therefore received with much favour, and soon became the fashionable physician of Rome.

Coming now to the first years of the Christian era, we find Rome much advanced in power by the great victories of Scipio over Hannibal, to be shortly followed by the fall of Carthage, and the crushing defeat of Mithridates by the brilliant Pompey, whose deeds are in turn eclipsed by the genius of Cæsar, and later on by his nephew, the illustrious Augustus, who, returning to Rome crowned with victory, constituted himself Emperor of the mightiest monarchy of all ages. During his lifetime he was content "to preserve those dominions which had been acquired by the policy of the Senate, the active emulation of the Consuls, and the martial enthusiasm of the people";[1] and his example having been followed by his successors, Rome now entered on a time of peace, luxury, and vice before unknown in the world's history. Here, in that huge city whose inhabitants numbered four millions (Lipsius), was the place for medical men, charlatans, and quacks; and here we cannot doubt that the gynæcologist was much in demand, if, indeed, we are to take Messalina and Agrippina as types of the morality of the day. "In the case of Agrippina, who used to leave the palace of the Cæsars and go to the brothels of Rome and stay there all night, having coitus with anyone who cared to come, it is obvious that the condition was one not of health; it was one of disease, and it is by no means improbable that both she and Messalina suffered from eczema of the vagina."[2] Public decency during

[1] Gibbon, "Decline and Fall of the Roman Empire," c. i.
[2] L. Brunton, "The Action of Medicines," p. 553.

the republican period was well observed in Rome, but during the imperial times licentiousness often reigned supreme.

We need not enter into all the factors that helped to produce a state of vice and immorality which led Juvenal to exclaim: "Vice has culminated"; "no guilt or deed of lust is wanting since Roman poverty has disappeared." Our aim is merely to give a glance at what existed in order to show that a loose sexual relation existed between the people of all ranks; and this must have led to the spread of venereal diseases, did such exist, a point, however, which we are unable to prove; while, on the other hand, if venereal disease did not exist, this sexual excess at least tended towards the creation of diseases of the organs of generation in both sexes.

Undoubtedly the conduct of the Emperors largely influenced the sexual habits of the masses. Both Julius Cæsar and Augustus led dissolute lives, but neither equalled Tiberius, whose amours at Capreæ cannot be described.[1] Caligula had a brothel in his palace, and by taxing the keepers of the lupanaria he was able to derive a substantial income from their infamous calling. Nero, not content with visiting the houses of prostitutes, dined in public with a crowd of these creatures; while he founded on the shores of the Gulf of Naples houses of ill-fame, which he filled with the most abandoned women. Need we allude to Galba, Otho, Vitellius, Vespasian, Titus, or Domitian, each and all steeped in vice? Nor need we mention Commodus, further than to say that not less than three hundred maidens ever surrounded him in his palace; whilst Elagabalus may be dismissed with the remark that he has been fittingly compared to a wild beast.

But if the Emperors were saturated with vice and lust, their wives were often little better; and in Faustina, Agrip-

[1] Suetonius, "Tiberius," c. xliv.

pina, and Messalina we have examples of women who preferred the brothel to the palace; for the wife of Claudius loved to stand at the doors of the lupanaria decked in her yellow wig,[1] with bared breasts and gilded nipples,[2] *atque æra poposcit.*

Among all classes immorality reigned, and Juvenal has in his sixth satire left us a picture of the habits of the Roman women—a picture painted by a master's fearless hand, which shows a condition of society and a supremacy of lust never before reached by any nation: an age in which the Spintria and Fellator[3] had an ode,[4] and those who were *lingua maritus, mœchus ore* had their admirers.

Amidst such surroundings, how could we expect that there would be any female modesty, even if we sought it, among the younger women? for the walls of the private houses were painted with lewd frescoes,[5] and with designs similar to those that may be seen in many of the houses of Pompeii to-day—paintings whose artistic merits are quite overshadowed by their obscene subjects.

Around the necks of the children, male and female, was often hung a *fascinum*, to act as a charm against witchcraft; while in every field, and in many paths, were to be seen statues of the god Priapus, always conspicuous, and always an object of attention,

"Which maids peep at with hands before their face."[6]

The baths were the resort of both sexes, who frequently encountered one another in a nude condition,[7] and the women

[1] Prostitutes were compelled by the Roman laws to dye their hair either blue or yellow. Messalina, having black locks, was accustomed to wear a yellow wig (*flavo galero*) when visiting the lupanar. It would appear that yellow hair has a fascination at the present day for many of the *delicatæ*.

[2] "Tunc nuda papillis constitit auratis," Juvenal, Sat. vi.

[3] Martial, xi. 31. [4] *Ibid.*, xi. 61. [5] Suetonius, "Tiberius," xliv.

[6] Martial, iii. 68. [7] Pliny, H. N., xxxiii., c. liv.

put off their modesty with their garments;[1] while the aliptes were wont to excite the passions during the massage movements that followed the bath:

"Callidus et cristæ digitos impressit aliptes."[2]

No vice was neglected, and we therefore are not surprised when Juvenal tells us that the women refused to bear children, and abortion became the fashion—to such an extent, indeed, that he exclaims: "Rarely did a gilded bed contain a woman lying-in, so potent are the arts[3] and drugs[4] of her that can insure barrenness. The operation, however, frequently proved fatal,[5] and Suetonius[6] says that Julia, the daughter of Titus, lost her life after Domitian (the advocate of *κλίνοπάλη*) had obliged her to procure a miscarriage.

Amidst such depravity we should have expected to find venereal diseases thriving apace, yet, strange to say, no author has left us such a description of gonorrhœa as will enable us to say that that disease really existed in those days. Celsus (vi. 18) has painted us an exact picture of phimosis and orchitis, but he does not say that these conditions were due to sexual intercourse.

We do know, however, that certain diseases, classed under the general term of *morbus indecens*, existed,[7] and these diseases the Roman doctors refused to treat, and it was even considered unbecoming to confess[8] to them; consequently the

[1] As Gyges said to King Candaules: *ἅμα δὲ κιθῶνι ἐκδυομένῳ συνεκδύεται καὶ τὴν αἰδὼ γυνή* (Herodotus).

[2] Juvenal, Sat. vi.

[3] "Est etiam æneum spiculum, quo jugulatio ipsa dirigitur, cæco latrocinio, *ἐμβρυοσφάκτην* appellant; utique viventis infantis peremptorium," Tertullian, 'Liber de Anima," ch. xiii. (Ramsbotham).

[4] Soranus, c. xvii., *Τὰ φθόρια*.

[5] "At teneræ faciunt, sed non impune, puellæ, sæpe, suos utero quæ necat, ipsa perit" (Ovid).

[6] Domitian, c. xxii.; Juvenal, Sat. ii.; Plin., iv., Epist. xi.

[7] Martial, xi. 62: "Partem gulosam solvit indecens morbus."

[8] Celsus, vi. 18.

slave doctors attended to their rich masters, while probably the Archiatri saw to the poor.[1]

Whether gonorrhœa was present or not, female diseases were undoubtedly common, and we accordingly find that gynæcology was one of the specialities that existed in Rome, and gynæcologists[2] were numerous. Soranus alludes to these in the following lines: "Dicimus quosdam esse mulierum medicos quia affectiones mulierum sanant; et homines solent obstetrices ad morbos vocare, quando mulieres proprium quid patiuntur et quod illis cum viris haud commune sit" (c. xlvii.).

* * * * *

### The Encyclopædists.

In the opening years of the Christian era we have first to note the writings of the Encyclopædists, whose labour it was to collect and set forth what was known in literature and science. Among the subjects included was medicine, and had it not been for these writers we should never have even heard of many authors whose works have been lost to us; thus, Pliny states that he consulted 2,000 books in compiling his works, whilst Celsus mentions over ninety authors.

Celsus (B.C. 53 to A.D. 7) lived in the reign of Augustus, but little is known of him personally. There seems to be some doubt whether he was actually a physician himself, or whether he studied medicine merely as a branch of general science. He has left to us his work "De Medicina," divided into eight books, and scattered throughout these there are a few chapters and references to gynæcology and abdominal surgery, which we shall now proceed to examine.

[1] Sanger, "History of Prostitution," 1895.
[2] *Ἰατροὶ γυναικεῖοι*, Hæser, *op. cit.*, i. 430.

*The Gynæcology contained in the Works of Celsus.*

*Anatomy.*—The uterus (vulva) in young women is very small, but in women, except when they are pregnant, it is not much larger than a body that may be embraced by one's hand. The vulva begins opposite the middle of the belly, in a straight and thin neck which they call the passage, and from thence it is turned a little to the right hip; then, proceeding above the rectum, connects its sides with the ilia of the woman.

*Therapeutics — Pessaries.*—In B. V., c. xxi., our author gives an account of pessaries and their use. He says that the Greeks call them pessaries (πεσσοὺς), and that when the medicinal substances are prepared they are applied to soft wool (*molli lana*), which is then introduced into the vagina. He then gives receipts for pessaries, to produce the periods, to prevent inflammation of the uterus (from Numenius), to cause the expulsion of a dead fœtus, one for hysteria due to uterine disease, and one for sterility.

*Catheters.*—Celsus says that the largest female catheter should be 9 inches long, and the smallest 6 inches (B. VII., xxvi.).

*Digital dilatation* of the uterus is referred to in describing an obstetrical operation (B. VII., c. xxix.).

*Friction.*—B. II., c. xiv., is devoted to the subject of massage; its application to women is mentioned (B. IV., c. xx.).

*Peritoneum.*—The peritoneum is alluded to in connection with ruptures. Rupture of the peritoneum without any lesion of the integuments is sometimes seen. In women the accident often depends on the distension of the womb, and it is especially at the groin where the condition is observed (B. VII., c. xvii.).

The origin of the word "peritoneum," from the Greek περιτόναιος, is given (B. IV., c. i.).

*Uterus.*—The author remarks that after the stomach the uterus is the organ that is most frequently affected by disease, and that women affected with uterine disease sometimes lose their reason, or fall as though suffering from epilepsy. In these cases, among other remedies, cold applications should be made to the region above the pubes. If there be ulceration of the womb, it is to be treated by local applications of caustic or cautery (B. VI., c. xviii.), and if there be pain in the uterine region, use fumigations of sulphur. General massage of the whole body is recommended later on in the chapter.

Flux and menstrual disorders are also briefly noticed (B. IV., c. xx.).

In B. V., c. xxvi., the following are given as symptoms to indicate that the uterus (vulva) is wounded: Pains in the groins, hip-bones and thighs; blood escapes through the wound and by the natural outlet; bilious vomiting follows; the patient may lose the power of speech or may lose her reason; those who have their senses complain of pain in the nerves and in the eyes, while those who succumb present the same symptoms as those who die from a wound in the heart.

In B. V., c. xxv., there is a receipt for insomnia caused by pains in the uterus.

*Prolapse of the Uterus.*—In cases of prolapse of the womb, the organ is first to be examined to ascertain if it is healthy or diseased. According to its condition, it is to be treated by astringent washes, etc., and then to be returned, after which a medicated pessary is introduced, and the legs are bound

together so as to prevent the pessary and the womb from slipping out.

*Vagina.*—Atresia of the vagina is referred to at length in B. VII., c. xxviii. Celsus points out that the condition may be either congenital or acquired through ulceration. If it is a congenital condition, then a membrane will be found closing the mouth of the vagina; if due to ulceration, then the part is filled with a fleshy substance. In congenital cases it is only necessary to divide the membrane by two incisions made X-wise, taking every care not to injure the urethra. If, however, we have to deal with a case resulting from ulceration, then the incision must be a vertical one. Having seized the edges of the incision by a vulsella or by a hook (*vulsella vel hamo*), we must excise a small strip of tissue. Next introduce into the wound a longitudinal tent (*linamentum*, λημνίσκος), which has been dipped in vinegar, and this is covered by a piece of unwashed (greasy) wool moistened with vinegar. On the third day the wound is to be dressed. When healing begins a leaden pipe is introduced, which is smeared with substances likely to cause a cicatrix, and so prevent adhesion; and various drugs may be injected through the pipe with the same object in view.

*Vulva.*—A swelling in the groin with fever often denotes ulceration of the vulva (B. II., c. vii.).

*Bladder.*—Stone in the bladder is referred to in B. II., c. vii. In cases of stone in the bladder, women are obliged to frequently scratch the parts about the genitals, and if they press the neck of the bladder with their finger they are able to feel the stone. Later on in B. VII., c. xxvi., the operation for stone in the female bladder is described. It is pointed out by our author that in case of small stones no operation is

needed, as they frequently pass by the urethra of their own accord. If, however, they are large and the patient is a virgin, then the operator should place his finger in the anus; but if the patient be a married woman, then the finger is placed in the vagina. "Tum, virgini quidem, sub ima sinisteriore ora; mulieri vero, inter urinae iter et os pubis, incidendum est, sic, ut utroque loco plaga transverse sit." The incision in virgins would appear from the above to have been made along under the left edge of the labia on one side.

*Abdominal Surgery.*—In Book VII., chapter xvi., Celsus deals with penetrating wounds of the abdomen, and as he describes the technique of closing the abdominal wound and other matters of interest, we shall extract his descriptions.

Our author says that wounds of the small intestines are hopeless, but that surgical treatment for suturing the large intestine is more hopeful. If we find that the intestines are prolapsed through the wound, and the latter is not large enough to enable us to return the bowel, then we must proceed to enlarge the opening. If the bowel has become dry we must wash it with water and oil. Then the assistant should hold open the sides of the wound either with his fingers or with two hooks, and he should take care that he has the peritoneal edges. Having returned the intestines, they are to be gently rolled about, so far so as to try to restore them to their original position. Next proceed to examine the omentum, and, if necessary, remove a piece with a pair of scissors (*forfice*).

In closing the abdominal wound it is necessary to have a needle in each hand, threaded with a double thread, and to commence by pushing the needle held by the left hand through the right side of the wound from within outwards, while the needle in the right hand is pushed through the left side of the wound. The needles are then changed to the

opposite hands, and are again made to penetrate the side from within out. Having closed the peritoneum thus, the skin is then closed in the same manner. Glutinous substances are then applied to the wound, and it is covered by a sponge or greasy wool soaked in vinegar, the dressings being kept in position by a bandage.

*Operations for Umbilical Hernia* (B. VII., c. xiv.).—Our author says that other writers, such as Meges, Sostratus, Gorgias, and Heron, have given their views on the contents of umbilical hernias, and mentions that the intestine, the omentum, wind and fluid, may all be found in different hernias. He then proceeds to give a differential diagnosis whereby one may be able to distinguish the different contents.

The treatment will vary according to the contents of the hernia. If the swelling is due to gas or to carcinomatous-like tissue, then these varieties should not be operated on. Those which appear healthy should be excised and the wound dressed with lint, and those which have fluid as their contents should be incised and dressed with lint. For other varieties the treatment will vary. Some operators, having emptied the sac, squeeze it between two pieces of wood, and so bring about gangrene. Others pass through the base of the sac a needle threaded with a double thread; each thread is then tied separately, and so gangrene results. Some operators in doing this latter operation first make a small incision in the sac, into which the finger is introduced, and so the reduction is made more certain. Another method is to reduce the hernia, and then tie a cord round it and cauterize the part above the ligature with the actual cautery or with caustic.

*Paracentesis Abdominalis.*—The first method described by

Celsus is to puncture the abdominal walls four fingers' breadth below the umbilicus, and to the left, or we may puncture through the umbilicus. Others, he says, first cauterize the skin and then make an opening into the abdominal cavity, so that the wound shall not close quickly. In tapping, the operator is warned against injuring any bloodvessels if possible. The trocar itself should be about the length of one's finger, and ought to be pushed in sufficiently far to penetrate through the peritoneum. Having made the puncture, it is then necessary to introduce a cannula of lead or brass. The lips of the protruding end are either turned back, or the median portion of the tube is moulded into a circular swelling to prevent the tube dropping out of the abdomen. After a portion of the fluid has escaped the cannula may be plugged (B. VII., c. xv.).

* * * * *

Pliny (A.D. 23 to A.D. 79).—The next of the Encyclopædists was the celebrated author of the "Historia Naturalis." He was not a physician, but in giving an account of the properties and uses of plants, and mineral and animal products, he has dealt also with their medicinal virtues, and consequently he has left us an extensive work on Materia Medica. He frequently refers to the various herbs used in the treatment of female complaints, and for convenience we have classified them as follows:

1. Plants that are supposed to have an influence in promoting the menstrual discharge: Elaterium, cabbage, parsley, oreoselinum, rue, nep, porcilaca, mallow, adarca, hippomarathrum, phu.

2. Plants that arrest hæmorrhage from the uterus: Cut leek (especially after abortions), mint, heraclium, coriander, blite, and gallic nard.

3. Plants that bring away the after-birth: Rue, pennyroyal, polium.

4. Plants used in fumigating the uterus: Garlic, rue, ammi.

5. Plant used in pain in the uterus: Asparagus root.

6. Plants used for purging the uterus: Ocimum, ammi.

7. Plant used for restoring the uterus to its proper position: Pennyroyal.

8. Plants used in obstruction of the uterus: Bulbed leek, cyperus.

9. Plant used in case of suffocation of the uterus: Sacopenium.

10. Plant used for menstrual derangement: Leucanthemum.

11. Plants used to produce abortion: Mallow with goose grease, sisymbrium.

12. Plants used to act on the uterus: Giant fennel, asarum, anemone, eryngium, nettle, castor oil.

13. Plants used to cure "white flux": Rose flowers, scandix.

In B. XXVIII., c. lxxvii., and B. XXXII., c. xlvi., there are chapters devoted to "Remedies for Female Diseases," in which Pliny mentions, among other diseases, ulceration of the mouth of the womb. This he advised to have treated by a pessary.

In B. XXI., c. xlvii., sponge tents (*penicilli*) are alluded to, but not in connection with uterine diseases. We shall, however, see that Aetius refers to their use in gynæcology.

In B. XXIX., c. x., the following occurs: "Ram's wool washed in cold water and steeped in oil is used for female complaints and to allay inflammation of the uterus. Procidence of the uterus is reduced by using this wool in the

form of a fumigation. Greasy wool, used as a plaster and as a pessary, brings away the dead fœtus and arrests uterine discharges."[1]

In B. VII., c. iii., Pliny gives an account of hermaphrodites, and remarks that they were formerly called androgyni.

In B. VII., c. xv., he refers to moles and their influence on menstruation, and he then adds a fabulous account of the menstrual discharge, while in B. XXVIII. he gives a further and more wonderful account of menstruation.

In B. XXIX., c. i., our author mentions a practice that became common in Rome: "Emasculation, self-inflicted by the use of pitch plasters as depilatories; the public exposure, too, of even the most delicate parts of the female body for the prosecution of these practices."[2]

*Abdominal Surgery.*—The only subject in connection with abdominal surgery that we need refer to in our author's works is his account of "those who have been cut out of the womb" (B. VII., c. ix.).

The Cæsarean operations referred to were performed on the subject after her death, for he says in the opening words of the chapter "that children who have cost their mother her life are evidently born under favourable auspices."[3] He then enumerates the following as examples: "The first Scipio Africanus, the first of the Cæsars, was so named from having been removed by an incision in his mother's womb. For a similar reason, too, the Cæsones were called by that name. Manilius also, who entered Carthage with his army, was born in a similar manner."

It may be remarked in connection with Julius Cæsar that, if he was delivered as above stated, yet his mother Aurelia did not die at the time, but lived for many years after.

[1] Riley's Pliny. [2] *Ibid.* [3] *Ibid.*

Furthermore, it is probable that this passage in Pliny first suggested to Rousset (1581) to give the name "Cæsarean" to the operation: "Hunc nostrum partum Cæsarei nomine inscripserimus."

We may in this place take the opportunity of referring to other cases of the Cæsarean operation recorded by ancient writers. Ovid tells us that Coronis having been destroyed by Apollo, he thereupon removed from her womb Asclepius, the God of Physic, "uteroque parentis eripuit." The same writer also tells us that Bacchus[1] was brought into the world in the same way, "ab alvo eripitur."

It would appear from some passages in that part of the Jewish Talmud called the Mishna, compiled at the end of the second century A.D., that this operation had been performed with success on some living women.[2]

It may also be noted that Numa Pompilius, the second ruler of Rome (715 to 673 B.C.), is said to have ordered that if any woman died whilst she was pregnant the child was immediately to be cut out of the uterus.

Lastly, as we have already noticed in connection with Hindu medicine, Cæsarean section was practised after the death of the mother (*vide ante*).

* * * * *

### The Donaria and Tabulæ of the Temples.

Pliny tells us that it was "the practice for persons who had recovered from a disease to describe in the temples of that god the remedies to which they owed their restoration to health, that others might derive benefit therefrom in a

[1] "Who denies Bacchus from the womb was torn?
A god might well, when beasts were this way born."
MARTIAL, i. 12.

[2] "Le Talmud de Jérusalem," Schwab.

similar emergency."[1] The tablets (*tabulæ votivæ*) were suspended on the walls, and accompanying the tablets there were frequently suspended casts of the part moulded in terra cotta; or small models were made, representing the part, in gold or silver, and these were presented to the god. The votive tablets, as we have remarked before, served as clinical records, and were used by Hippocrates in composing his works. "When Pausanius, the tourist, visited the temple of Æsculapius at Epidaurus (about 150 A.D.), he noticed six pillars engraved with stories of patients, two of which have been recently discovered in the excavations carried out there by M. Cavoiadeas. They date from about the close of the fourth century B.C." The following are two cases of abdominal surgery:

"Sostrata pregnant (?) for a year. She came in a litter to the temple, but since she saw no clear vision she returned home. On the way a man of noble aspect met her and her attendants near Kornus, and, hearing from the latter of her evil plight, bade them set down the litter on which they carried Sostrata; then, opening her belly, he took out a vast multitude of . . . (?) filling . . . (?) . . . footpans, and sewing her up, healed her. Then, bidding them send the offerings for the cure to Epidaurus, Asclepius disappeared."

"A man with an ulcer in his stomach. He incubated and saw a vision; the god seemed to order his followers to seize and hold him, that he might incise his stomach; so he fled, but they caught and tied him to the door-knocker (? *πρὸς ῥοπτοῦ*).[2] Then Asclepius opened his stomach, cut out the ulcer, sewed him up again, and loosed his bonds. He went away whole, but the floor of the chamber was covered with blood" (Withington).

[1] Pliny, xxix. 2 (Riley).

[2] Πρὸς ῥοπτρόν (?).

The donaria, or anathemata, were the gifts to the gods, and consisted either of a present of some kind, such as tools of trade, surgical instruments, paintings, or casts of a diseased part.

Luigi Sambon has given an account[1] of the Roman donaria. He says: "Hearts with their auricles very prominently shaped, kidneys, uteri, ovaries, and coils of intestines, are often found singly. . . . Reproductions of the vulva are often found, sometimes offering the characteristics of childhood, at other times those of puberty. Uteri are found in great numbers, some generally of the size of the normal viscus with a smooth surface; others are larger in size and offer a wrinkled surface and patulous cervix, as after delivery; they were offered as propitiatory gifts to insure an easy labour, or given by way of thanksgiving after safe delivery, or after recovery from difficult labour or disease. Some of these uteri have on one side the appendages attached. I have found that the left ovary and tube is far more commonly represented, proving even in those days a marked prevalence of disease of the appendages of the left side.

"Some uteri present a double opening at the os; they are undoubtedly representations of uteri septi. I have found no other malformations of the womb represented by these terra-cottas, such as uterus bicornis, although they are comparatively far more frequent. But this is not surprising, because uterus septus is easily diagnosed during the life by a simple manual examination if the septum extends as far as the os, while other malformations are difficult to detect, except in post-mortem examinations. As the terra-cottas representing uteri septi are rather frequent, although the malformation is rare, I believe that the idea of twin pregnancy was closely

[1] *British Medical Journal*, July 20, 1895.

connected with it, and this double opening may be considered, in most cases, as a conventional form indicating it."

Small cakes in the form of the male and female organs of generation were sold by the bakers' girls for sacrifice to Venus and Priapus.

## CHAPTER VIII.

### RUFUS EPHESIUS AND DIOSCORIDES.

*Rufus Ephesius* is called so from the place of his birth. He lived during the reign of Trajan (98-117 A.D.), according to Suidas. Of his life we know nothing. He wrote several medical works, some of which have been preserved, whilst chapters of other works that have not come down to us have been preserved in the works of Galen, Oribasius, Aetius, Alexander of Tralles, Paulus, Rhazes, Ibn Baitar. Looking through the passages from these authors contained in Daremberg's edition[1] of Rufus, we find here and there a few sentences which refer to gynæcological subjects (*vide* pp. 301, 312, 499, 500).

The chief works that we possess of our author are "De Renum et Vesicæ Morbis" (in the third chapter of which there are a few lines on calculus in females); "De Medicamentis Purgantibus"; "De Appellationibus Partium Corporis Humani" (this latter work has an interest for us inasmuch as it contains a catalogue of the terms applied to the various parts of the female genital organs).

The work consists of four parts: the first and fourth books are the original treatise, the second and third are extracts

[1] Daremberg et Ruelle, "Œuvres de Rufus d'Éphèse." Paris, 1879.

from it; whether they are all by the same author is not decided.

One of the works published by Daremberg in his edition of Rufus is entitled Περὶ σατυριασμοῦ καὶ γονορροίας, and deals with spermatorrhœa, not gonorrhœa.

Besides the works mentioned above, we know from other authors that Rufus wrote many treatises, such as a work on gout and one on the bones; in the latter work there is a short description of the pelvis. In looking through the lists compiled by Ackermann and Daremberg, the only notices of possible gynæcological chapters are one on "Sterility" and the "Suppression of the Periods," the latter being preserved by Aetius (B. XVI., c. li.).

The description of the genital organs of women is found in three places in the work "On the Names of the Parts of the Body," and we shall proceed to examine these passages now.

P. 147:[1] "With regard to the privates of women, the triangular extremity of the hypogastric region is called the comb (κτείς), while others call it the ἐπίσειον. The cleft in the genitals is called the σχισμα. The small fleshy body that hangs down in the mesial line is called the myrtle-berry (μύρτον). By others it is called the hypodermis, by others the clitoris (κλειτορίς); while touching the clitoris for lascivious purposes is expressed by the term κλειτοριάζειν. The μυρτόχειλα are the fleshy parts on either side of the σχισμα.

"Euryphon called them also steep edges (κρημνός). Nowadays for μυρτόχειλα we substitute wings (πτερυγώματα), and for μύρτον we substitute νύμφη."

It is to be observed that "nympha" and "clitoris" were used by the ancients as synonymous terms, and in some later authors

[1] Daremberg's edition.

(Aetius and Paul) directions are given for amputating the nympha, meaning thereby the clitoris.

P. 158, l. 184: "The spermatic vessels (in the male) are four in number—two varicose (κιρσοειδής = vas deferens) and two glandular (ἀδενοειδής = prostate); some call them also generative veins. The portion of the varicose vessels which run to the testicles (δίδυμοι) are called παραστάται (epididymis); some authors have no objection to call the whole of these vessels παραστάται. It is proper to see if the same arrangement holds good in both male and female: Herophilus, indeed, is of opinion that females have not κιρσοειδεῖς παραστατας (vas deferens); but we have seen in the uterus of a sheep varicose vessels on either side springing from the testes; these (Fallopian tubes) opened into the cavity of the uterus, and from these tubes mucous fluid escaped when they were pressed, so there is a strong presumption that these are spermatic vessels of the varicose species (κιρσοειδής); dissection would perhaps demonstrate this."

To Rufus must be accorded the honour of having given us the first description of the Fallopian tubes; Galen, Oribasius, and Aetius are the other authors who mention the tubes, Soranus having overlooked them.

P. 160, l. 193: "The genital member of women is called μήτρα and ὑστέρα; Hippocrates called it both δελφύς and γονή. The branches which spring from the top (of the uterus) on either side are the horns (κεραίαι) and antennæ (πλεκτάναι), names which also apply to the vessels (ἀγγεῖα) which suspend the uterus to the exterior (? round ligaments). The median and most elevated portion of the uterus is the fundus (πυθμην); the lateral portions are the shoulders (ὦμοι); the extremity is the isthmus and neck (αὐχὴν καὶ τράχηλος). The mouth of the neck is the first orifice (external os); Hippocrates named

it *ἀμφίδεον*,[1] from the circles of iron on the plough. The cavity which is encountered after the uterus is the *γυναικὸς κόλπος* (female sinus = vagina); the pudendum (*ἀιδοῖον*) comprises all that portion which is visible to the eye."

* * * * *

*Pedacius* or *Pedanius Dioscorides* lived probably in the first century A.D. As he is not mentioned by Pliny, he was either a contemporary or lived at a later period. He has left us his work on Materia Medica, a work which has been translated into many languages, and which enjoyed for many centuries a well-merited popularity.

He was a physician by profession, and he has given us an account of all the articles which were known in his times to be efficacious in medicine. He frequently mentions drugs used for the diseases of women.

Besides his great work on Materia Medica, there are some minor writings attributed to him, and in one of these, entitled *Περὶ εὐπορίστων ἁπλῶν τε καὶ συνθέτων φαρμάκων*, which is divided into two books, we have chapters lxix.-c. of the second book devoted *ad uteri reliquorumque genitalium membrorum affectus remedia, i.e.*, remedies to be applied to the diseases of the uterus and the rest of the generative organs.

Each chapter in the work begins with a short sentence stating the disease for which the drugs in the chapter are used. Thus, for instance, in chapter lxxiv. we have the following: "Irritating prurigo of the vulva and vagina (*κόλπων*) is relieved by an infusion of portulaca juice, linseed prepared in water-mead, fenugreek, the oil of lilies or cyprus, tragacanth, with water."

In the chapters devoted to gynæcological remedies, the

[1] *ἀμφίδιον*, Daremberg.

following conditions are mentioned: Inflammation and pain in the uterus, for which pessaries are prescribed; ulceration of the vulva; prolapse of the uterus; menstrual disorders to be treated by emmenagogues; drugs to expel the fœtus, aid or prevent conception, and those which are to be used in cases of suffocation of the uterus.

Our author gives no description of the diseases treated, and his work may be compared to the "Therapeutic Index of Diseases and Symptoms" found in some of our modern works on materia medica and therapeutics.

# CHAPTER IX.

## SORANUS.

The name Soranus belongs to at least three physicians, if not, indeed, to four: (1) A native of Cos, who may have lived in the second or third century B.C.; (2) a native of Mallus in Cilicia, and called Mallotes, who lived after the times of Hippocrates; (3) a native of Ephesus, son of Menander and Phœbe, who, according to Suidas, practised in Rome during the time of Trajan and Hadrian (A.D. 98-138), and who in his younger days had studied at Alexandria; (4) a native of Ephesus, who lived at a later date than the third one mentioned, our authority for this being also Suidas.

Dietz and Ermerins have come to the conclusion that the third and fourth enumerated were one and the same. The only objection to this hypothesis is, as pointed out by Greenhill, that in the work "De Morbis Mulierum" the names of several physicians occur who lived later than the times of Soranus. As the text has probably been added to, this objection need not have any more force than it has when applied to many other ancient works.

Supposing, then, that we admit that there was only one Soranus of Ephesus, and that he wrote the work "On the Diseases of Women" that we are about to examine, then we know of his life the barest facts.

He was tutor to Attalus; he lived about the time of the famous surgeon Archigenes, but died before Galen wrote his work "De Methodo Medendi" (A.D. 178); he belonged to the sect called Methodists.

His works, according to Ermerins, consist of fourteen treatises.

The discovery of the work of Soranus on the diseases of women during this century came about in the following manner:

Fred. Reinhold Dietz received a commission from the Prussian Government to explore the public libraries of Europe, in order to investigate the manuscripts of ancient medical authors, which had not been sufficiently studied.

At Paris, in La Bibliothèque Royale, he came on a manuscript, numbered 2,153, written in Greek, and which had been copied in the fifteenth century. On studying this, he noticed on p. 215 that the description of the genital organs in women was in the same words as those used by Soranus in the chapter from that author's works preserved in the writings of Oribasius. The same chapter had also been published in Paris in 1554, along with some chapters from Rufus of Ephesus.

Further investigation of the matter led him to the conclusion that he was dealing with the work of Soranus "On the Diseases of Women." In the library of the Vatican at a later date he discovered another copy of the work, but not so well preserved.

Returning to Königsberg with a copy of each manuscript, he proceeded to study them, but unfortunately he died before his labours were completed. The work was then taken in hand by Lobeck, and published at Königsberg in 1838.

Since that date it has engaged the attention of several well-

known authors, among whom may be mentioned Haeser, Pinoff, Guardia and Luneberg. Ermerins in 1869 published an excellent edition of the Greek text, with notes and translations in Latin; while Herrgott in 1895 brought out his edition in French, the chapters being dovetailed with the corresponding chapters of Moschion.

The work of Soranus that we shall now proceed to examine is entitled Περὶ γυναικείων παθῶν. It consists, in the edition of Dietz, of a hundred and twenty-two chapters and a part of the hundred and twenty-third. The number has been reduced by Ermerins and Herrgott in their editions to sixty-six, as Ermerins showed that many of the chapters were interpolations from Aetius. Of the chapters, forty-six are contained in the first part of the work, which is chiefly obstetrical, and deals with the duties of midwives (for whom the work was written), the care of a natural labour and miscarriages, and with the care of the infant. The second part contains twenty chapters, several of which are purely gynæcological.

Without entering into the subject-matter of these chapters, which deal with obstetrics, we might, however, remark *en passant* that among many excellent chapters, those on dystocia (chapters lxii.-lxv.) stand out as among the most remarkable handed down to us from ancient authors, and at once place Soranus in the very highest position as an obstetrician, and show beyond dispute that the obstetrical art had been brought to great perfection in those ages.

What we have particularly to notice about Soranus is the methodical manner in which he attacks his various subjects. He does not merely mention the name of the disease, and then proceed to rattle off a multitude of receipts for its cure, as we so frequently find in the works of ancient authors who have merely been compilers and copyists. Our author is

never content with such superficial methods. He gives sometimes a historical introduction concerning the views of his predecessors, then he enumerates the causes of the trouble, after which he alludes to the prominent symptoms, and then, having given his reader a clear picture of the malady, he proceeds to systematically attack the various phases of the affection. In short, a careful study of this work of Soranus must convince the reader that our author was certainly a specialist in gynæcology, and that he thoroughly understood his subject, and was not merely a compiler, but an original, able and judicious thinker. His work, therefore, is one of the three most important gynæcological treatises written previous to the present century, the other two being the pseudo-Hippocratic treatise that we have already examined, and the work of Aetius, to be examined later on.

### A Résumé of the Work of Soranus.

Soranus opens his work with an introductory chapter in which he considers the best method of dividing his subject. The first chapter deals with the special qualities that a midwife should possess, and, among other points, our author lays it down as a rule that her nails should be trimmed and rounded so that they will not wound the organs. He wisely remarks that she should be discreet, inasmuch as she is often trusted with family secrets. In the next chapter he further deals with the qualifications of the midwife, for the work was evidently written especially for their instruction. With regard to the study of anatomy, he says that, while it is his intention to explain the structure of the female genital organs, he considers such knowledge of little importance; but he remarks that others will more readily believe us when we contend that the study of the anatomy of the parts is useless, if we first

show that we have some knowledge of anatomy. Soranus thereupon gives the famous chapter on the anatomy of the genital organs in woman that was preserved in the works of Oribasius, and which led Dietz to his discovery of the long-lost work of Soranus. We shall reproduce this chapter in full.

After the chapter on anatomy, we have several which deal with menstruation, the virgin state and fecundity. In the chapter on conception, he asks the question, "What time is the most favourable for conception?" and he answers, "Just after the menstrual period." This observation is in accordance with recent researches. In the chapter on the signs of conception, he remarks that the retention of the seed in any part (of the genital canal) would not be conception, conception being the retention of the seed in the uterus itself. Herrgott queries whether Soranus here had ectopic pregnancy in his mind's eye. In chapter xiv. the treatment of the woman when enceinte next engages our author's attention, and among the things mentioned by him in this chapter are massage, inunction, the hot and the vapour bath. Abortion is considered at length, and the various methods practised in our author's day are described. He himself recommends the third month as the most favourable for miscarriage. He likewise describes the methods adopted for preventing conception, and among other methods he describes the inserting into the mouth of the womb a plug of lint, and the use of astringent pessaries before coitus.

Chapter xix. deals with the membranes developed round the fœtus, and our author makes the mistake of saying that there are four vessels in the umbilical cord. A natural labour is then fully described, and the use of the obstetrical chair is referred to.

In chapter xxii. mention is made of the removal of the membranes, and a minute description of fumigation of the uterus by means of a small silver vessel is given at length. The method described by our author was most probably the one in general use, for the large cumbersome apparatus described in the pseudo-Hippocratic works would have been used only by the well-to-do, as it is extremely unlikely that such an apparatus could have been sent to the patient's house on each occasion; and, secondly, on account of the method of using it, by inserting it in a specially heated hole in the floor, it was very inconvenient and expensive.

We then have several chapters on the care of the infant and some of its slight ailments. This concludes the first part of the work.

The second part deals more with gynæcology than the first, and opens at chapter xlvii., in which the author considers the question whether these are diseases which are peculiar to women alone, and he agrees with those who deny this proposition. He, however, refers to the fact that there are specialists who make the diseases of women a special study, and that midwives are accustomed to call those practitioners to their aid in cases where these special organs are diseased.

In chapter xlviii. our author enters at length into a consideration of retention of the menses, scanty menstruation and dysmenorrhœa. The able and methodical manner in which these subjects are handled shows our author at his best, and one has no hesitation in pointing to this chapter as being one of the finest in the works on ancient medicine that have been handed down to us. He gives us in this chapter a complete insight into the excellent therapeutic agents employed by himself and his contemporaries, and no chapter that we can call to mind could establish more thoroughly the

fact that minor gynæcology had made very considerable advances among the ancients.

We then have an excellent chapter on uterine hæmorrhage, and we have mention made of the vaginal speculum for the first time, and the plugging of the uterus with sponges. The various fluxes of the uterus and vagina are dealt with, but we cannot distinguish from the descriptions any one that could be taken to refer to gonorrhœa, though the disease probably existed in our author's day.

The remaining gynæcological chapters deal with the atonic uterus, the description of which appears to correspond to cases of subinvolution. Then there are chapters on uterine paralysis, uterine deviations, air in the uterus, which is really a description of septic metritis, and the finger is mentioned as being used as a curette to remove retained clots, etc. There are chapters also on inflammation of the uterus, and the last portion of the work is devoted to the celebrated chapters on dystocia and prolapse of the womb; in the chapter dealing with the latter hysterectomy is referred to. Fibroid of the uterus is also mentioned.

## Anatomy.

Uterus.—The uterus, ἡ μήτρα, is called also ὑστέρα and δελφύς—μήτρα because it is *mother* (μήτηρ) of the fœtuses born from it, or because it makes those having it mothers; according to some, because it has a *measured* period (μέτρον χρόνον) for menstruation and bringing forth; ὑστέρα because it exhibits its functions *late* (ὕστερον), or because it occupies, if not exactly, at any rate on the whole, the *lowest part* of the female intestines; δελφύς because it brings forth *brothers* (ἀδελφόι).

*Its Position.*—It lies in the space between the acetabula,

between the bladder and the rectum, resting upon the latter, but beneath the bladder either in whole or in part, according to change in its size. For in infants it is smaller than the bladder, and hence comes to be entirely under it; but in virgins at puberty it reaches the same height as the bladder. In those more advanced in age and in married persons, especially multiparæ, it is even larger, so that it extends to where the colon stops. It is still larger in pregnancy, as anyone can see, the peritoneum and hypogastrium being pushed forward according to the development of the fœtus, with its membranes and fluids. After delivery it becomes contracted, but retains a larger size than before pregnancy. Under these circumstances, accordingly, it is larger than the bladder, and does not lie right under it; for, in front, the neck of the bladder projects beyond, ending in the urethra and being stretched alongside of the whole vagina, but it falls short of the uterus above. Behind, the fundus of the uterus lies higher than the fundus of the bladder, being under the umbilicus, so that the cavity of the bladder lies upon the neck of the uterus, and its fundus upon the cavity of the latter.

*Ligaments.*—The uterus is connected by thin membranes, above with the bladder, below with the rectum, to the sides and behind with the parts springing from the ilia and sacrum. When these (membranes) are shortened by inflammation, it is dragged on and lies to the side; when they are weakened and relaxed, it falls down, not because it is an animal, as some have thought, but having, as it were, a sensitiveness, and thus being contracted by astringents and relaxed by emollients. The shape of the uterus is not convoluted as in the brutes, but more like a cupping-glass. For, beginning from the rounded and broad end at the fundus, it contracts sensibly to

the narrow mouth. The first and projecting part of it is called *στόμιον*; next comes the *τράχηλος*, then the *αὐχήν*; these last two together form the *καυλός*. Where it broadens out beyond the constriction of the neck, we have first the *ὦμοι*, then the *πλευρά*, last of all the *πυθμήν*, beneath which is the *βάσις*. The whole space is called *κύτος*, *γάστρα*, *κόλπος*. The os uteri lies in the centre of the female genital organs, for the cervix is closed in by the labia; the os is removed from these, in some more, in some less, according to age: in adults, generally $3\frac{1}{2}$ or 4 inches; in those who have borne children it comes to be nearer through elongation of the cervix. The size (of the os uteri) varies, and is in most persons normally as large as the outer end of the auditory meatus. It opens at certain times—as in the orgasm of coitus to receive the semen, during menstruation that the blood may escape, in pregnancy according to the growth of the embryo, and in labour to the greatest extent, until it will admit the full-sized hand. In texture it is soft and fleshy in virgins, like the sponginess of the lungs or the smoothness of the tongue; but in those who have borne it becomes more callous, like the head of a polypus, or, as Herophilus says, like the end of a bronchus, becoming hard through the passage of discharges and by parturition.

*Structure.*—The whole uterus is as far as possible fibrous, not composed of fibres alone, but also of veins, arteries, and flesh. Of these, the fibres come from the membranes of the spine, but the arteries and veins from the vena cava and the large artery lying on the spinal column: for two veins spring from the vena cava and two arteries from the large artery, of which one vein and artery run towards each kidney; but before these enter the kidneys they bifurcate, two branches going to each kidney and two embracing the uterus, so that

the latter receives four vessels, two arteries and two veins. From these an artery and vein pass to each ovary.

*Ovaries.*—The ovaries grow out from the side near the isthmus, about opposite to the middle of the uterus. They are not of firm consistence, are glandular, and are covered with their own membranes. In shape they are, unlike the male organs, long and somewhat flat, and are round and broad at their base. The spermatic vessel from the uterus is carried out of each ovary, and, being placed along the sides of the uterus as far as the bladder, enters into the neck of the latter. Whence it appears that the seed of the female, inasmuch as it is poured out, does not play a part in the production of life. Of this we shall speak when we treat of the seed. There are some, amongst whom is Chius, who say that there are suspensory ligaments for the ovaries, and we have seen the same with our own eyes in a woman suffering from hernia, in whom during the operation the ovary fell down through relaxation of the vessels which support and surround it, and with these the suspensory ligament came down.

*Surfaces of the Uterus.*—The whole uterus is made up of two coats, which differ in their arrangement like parchment. The outer is more fibrous and smooth, and firm and white; the inner is more fleshy and villous, and soft and red, intertwined throughout with vessels, which are most numerous and noteworthy over the broadest part of the body, where the seed becomes adherent, and from which the menstrual discharge takes place. These two coats are kept together by softer and more fibrous bands; and, accordingly, when these are stretched the uterus frequently falls down, the fibrous coat remaining in its place, the other one descending inverted. Further, commonly in multiparæ the uterus has folds running towards the body, usually two, and closely folded, so as

to be like felt; in those who have borne, the whole uterus is stretched out and becomes rounded. Diocles says that there are cotyledons in the cavity of the uterus called πλεκτάναι, or κεραίαι, which are nipple-like growths, broad at the base and narrowing to the top; that they lie on both sides, being devised by Nature for the sake of teaching the embryo to practise beforehand how to draw at the nipples of the breast. But they make anatomy speak falsely, for the cotyledons are not found, and what they say about them is contrary to Nature, as has been proved in treatises on generation.

*Sympathetic Relations of the Uterus.*—We must not suppose that the uterus is essential to life, for not only does it fall down, but in some it may be cut away without causing death, as Themiso has recorded, and they say that in Galatia pigs fatten after the uterus is cut out. Nevertheless, it affects sympathetically the stomach and membranes. It has, moreover, a certain sympathetic relation to the mammæ. At all events, when it grows larger at puberty the breasts also swell out simultaneously; and although it brings the seed to perfection, yet the mammæ prepare milk for the nourishment of the offspring when born, and when the menses flow freely the milk dries up, while as long as the milk comes freely the discharge does not appear; so also in those past their prime, when the uterus grows smaller the mammæ likewise somehow waste away, and when the embryo is diseased their size is reduced; in fact, when in the pregnant we see the breasts fall away and contract, we anticipate that there will be a miscarriage. So much for the nature of the uterus.

Vagina.—The female pudenda are also called κόλπος γυναικεῖος. The wall is fibrous and somewhat rounded, like intestine, more roomy at its inner and narrower at its outer

end, and in it sexual intercourse takes place. It is attached internally to the cervix uteri, externally to the labia, inferiorly to the breech, laterally to the fleshy parts of the acetabula, superiorly to the neck of the bladder; for this last, as we have said, extending beyond the os uteri, and being placed close above the genitals, opens at its end into the urethra. Accordingly, it is evident that the vagina lies beneath the neck of the bladder, but upon the anus and the sphincter and the lowest part of the rectum. Its length, as we have mentioned above, varies not only with age or with sexual intercourse, in which the cervix, being elongated like the male organ, takes up some part of the vagina, but also some have by nature a longer cervix and others a very much shortened one. The length (of the vagina) is in most adults 4 inches. It is certainly closed and narrower in virgins, being furnished with folds held together by vessels taking their rise from the uterus; these cause pain in first sexual intercourse, when the folds are opened out, for they are broken and discharge the blood usually seen. For the view is false that a thin partition-membrane has grown up, barricading the vagina, that this is broken, and causes pain at first sexual intercourse, or sooner when menstruation sets in, and that, grown thicker, it produces the disease called atresia: for, in the first place, it is not found in dissection; and, in the second place, in virgins it ought to offer resistance to examination with a probe, for the probe penetrates deeply; in the third place, if the membrane was the cause of pain in intercourse, excessive pain must necessarily accompany the appearance of menstruation, and not be delayed till coitus. Further, if the membranes becoming thick caused atresia, we should find it in the same place constantly, in the same way in which we always see other parts each in its own place.

But in cases of atresia the obstructing membrane is found at one time near the labia, at others in the middle of the vagina, at others at the os uteri. So much for the vagina.

External Genitals.—The parts seen outside are called *πτερυγώματα*, forming, as it were, the lips of the vagina. They are thick, fleshy, and extending down beside each thigh, as it were, diverging from each other; above they end in what we call *νύμφη*, which is the beginning of the two labia. In Nature this fleshy prominence is muscular, and it is called "nymphe," through its being covered as brides are veiled. Below the clitoris another fleshy prominence lies concealed, which belongs to the neck of the bladder: it is called the urethra, the rough portion forming a fold which is called *χείλος*.

Bladder.—The female bladder differs from that of the male; for the former is larger, and has the neck curved; the latter is smaller, with a straight neck.[1]

### Physical Examination of the Pelvic Organs.

Inspection, palpation and percussion are mentioned by our author. In discussing a case of septicæmia after labour, he says when the belly is percussed it is found to be tympanitic (c. lvi.). In diagnosing a fibromyoma (*μύλη*) from dropsy, it is pointed out that in the case of the former the tumour does not yield to the pressure of the hand, nor is there a depression formed as in cases of dropsy (on pressure), while the tumour is further distinguished from tympanitis by the absence of the tympanitic sound on percussion, and from dropsy by the absence of a wave of fluctuation on palpation (c. lviii.). In-

[1] The above translation is by Freeland Barbour, and was published in the *Edinburgh Medical Journal*, vol. xxiv., p. 231, 1889. I have not altered his words in any way, although there are some passages that I should have been inclined to have translated somewhat differently.

spection is so frequently referred to that we need give no illustrations.

### Vaginal Examinations.

In describing the conduct of a labour, our author says: "The midwife should introduce into the vagina the index finger of the left hand, the nail of which has been evenly pared" (c. xxi.), "so as not to lacerate the organs" (c. i.).

The midwife should introduce into the uterine orifice her finger, which has been covered with grease (c. xvi.).

Deviations of the uterus may be recognised by introducing the finger into the vagina (c. lv.).

The finger is described as being introduced into the uterine cavity to explore it, and to remove any adherent blood-clots (c. lvi.). Women were accustomed to examine themselves, and in dealing with the subject of "prevention of conception" we have the following: "To prevent conception, the woman before coitus should smear her cervix with rancid oil, or with honey, or with a decoction of cedar-oil, or she should push into the os a thin strip of lint, or introduce into the vagina an astringent pessary" (c. xvii.).

### Rectal Examination.

In the differential diagnosis of inflammation of the rectum from peri-uterine inflammation, the author directs that the finger should be introduced into the rectum to aid us in coming to a conclusion (c. lx.).

### The Position of the Patient.

During treatment, among the positions mentioned, Soranus alludes to the suspension of the patient head downwards in case of prolapse of the uterus, but is not in favour of it (c. lxvi.).

He recommends the foot of the bed to be raised sometimes (c. xlix.), and the patient's legs to be crossed (c. xlix.), while in some forms of dystocia he places the patient on her knees (c. lxiv.).

In dealing with a case which he supposes to be peri-uterine inflammation, but which is probably a case of prolapsed ovary or salpingitis, he says that the tumour, which may be felt by a rectal examination, will alter its position if the patient be placed in the knee-elbow position (c. lx.).

### Therapeutic Agents.

*Instruments used in Examinations and Operations.*

*Speculum.*—In cases of hæmorrhage from the vulva, we can distinguish the place from which the blood is proceeding with more exactness by using the speculum (c. xlix.).

*Sound.*—In plugging the os in case of hæmorrhage, a sound (*μήλη, specillum*) is to be used (c. xlix.).

*Uterine Dilators.*—Uterine dilatation is alluded to in several chapters (c. xlviii.), but the method of dilating by means of sounds is not mentioned. The finger, however, is referred to as a dilator (c. xvi., c. xxi.).

*Catheters.*—In dystocia, if there be a stone in the bladder, it should be pushed up towards the fundus of the bladder by a catheter (c. lxiv.). Catheters for drawing off the urine (c. xvi., c. xxi.), pipes for fumigating the uterus (c. li.), and a cannula for irrigating the uterine cavity (c. lvi.), are all referred to by our author, but the technique of the latter operation is not described at length. Vaginal and rectal injections are frequently mentioned (cc. xlviii., xlix., lx., lxiv.).

*Sitz-baths, vapour baths, baths of oil, and the thermæ* are frequently mentioned by our author in the treatment of his cases (cc. xiv., xv., xvii., xlviii., xlix.). Patients are advised to

refrain from the bath during the menstrual flow, especially during the first day (c. v.), unless baths are especially ordered by a medical adviser.

*Fumigations.*—In describing the various lines of treatment adopted by his predecessors in cases of retention of the secundines, Soranus says: "Strato, pupil of Erasistratus, used to place in a small vessel of silver or bronze, which was closed with a cover made of tin, the following herbs. . . . Having adjusted a small tube to the vessel, the mouth of the tube was placed in the vagina, and the vessel was then gently heated." Our author points out that this treatment may result in the vagina being severely burnt (c. xxii.).

*Fomentations and Cataplasms.*—Fomentations were applied by means of flax, wool or sponges; the latter, after being dipped in hot water or oil, were squeezed, and on being applied were covered by cloths (c. xlviii.).

Dry heat was applied by means of oval-shaped vessels filled with hot water, or by means of bladders filled with hot oil (c. xlviii.). The cataplasms were made of linseed or of warm flour in small bags (c. xlviii.).

*Bleeding*, *cupping* and *leeches* are frequently mentioned by Soranus.

*Massage.*—In the chapter on the retention of the menstrual fluid, our author says: "If menstruation is absent after an illness, it is the proper thing to massage the uterus, for friction will strengthen this organ" (c. xlviii.). Later on in this chapter he advises exercise and walking and general massage of the body, and particularly recommends massage of the uterus itself. He refers in another place to the massage being performed by one specially trained in rubbing (c. xlviii.).

*Pessaries.*—The pessary, and less frequently the suppository, are mentioned by our author (cc. xlix., lviii., lxvi.);

he contents himself with the receipts of but a few, and does not give the long lists to be found in the works of Aetius or Paulus.

*Trochischi*, such as were usually used for the rectum, are mentioned in the treatment of erosion of the cervix (c. xlix.).

*Uterine Plugs.*—In treating hæmorrhage of the uterus, Soranus advises that occasionally some soft linen be soaked in an astringent liquid, and that it should then be inserted by means of a sound into the uterine orifice. Again, he advises that a small sponge, longitudinal in shape, be taken, and, after being soaked in astringents, that it should be deeply inserted through the os uteri in order to form an effectual plug. After a time the sponge should be replaced by another (c. xlix.).

*Vaginal Plugs.*—Vaginal plugs made of wool were used to retain the prolapsed uterus (c. lxvi.), and also to prevent conception (c. xvii.).

*The Mechanical Pessary.*—In the chapter on prolapse of the uterus (c. lxvi.), our author says that Diocles was wont to introduce into the vagina a pomegranate that had been peeled and soaked in vinegar; this acted by its astringency, and perhaps in a mechanical way, in helping to prevent prolapse, as we have already seen in the pseudo-Hippocratic work.

### 1. Peritoneum and Connective Tissue.

*Parametritis.*—In chapter lx. of our author's work a description is given of inflammation of the uterus, and this description contains passages which evidently refer to pelvic peritonitis and parametritis (*vide* Metritis).

### 2. Diseases of the Ovaries.

*Hernia of the Ovary.*—There are some, amongst whom is Chius, who say that there are suspensory ligaments from the ovaries, and we have seen the same with our own eyes in a

woman suffering from hernia, in whom during the operation the ovary prolapsed through relaxation of the vessels which support and surround it, and with them the suspensory ligament came down (c. iii.).

### 3. Affections of the Uterus.

(*a*) *Stenosis and Rigidity of the Cervix.*—These conditions are mentioned in several passages by our author, and it is probable that he dealt more fully with rigidity in chapter lxi., which is entitled "On Scirrhus and Indurated Uterine Tumours." A fragment only of the chapter remains, but the paraphrase preserved by Moschion mentions "induration of the cervix."

In the first chapter on dystocia (c. lxii.), Soranus says that Diocles Carystius enumerates, as causes of dystocia, "induration of the uterine orifice and its consequent resistance to dilatation," and in chapter xvii. stenosis is put down as a possible source of danger to a woman who is pregnant. In chapter xvi. the midwife is recommended to dilate the uterine orifice with her finger during labour, especially in case of primiparæ, in whom the uterine orifice, composed of muscle, is very tense. In considering the causes of amenorrhœa, Soranus says (c. xlviii.) that the uterus may perhaps be in a condition of atresia, or be affected with callosities, scirrhus or inflammation. Old ulceration may lead to occlusion of the orifice by causing cicatrices, or the occlusion may perhaps be caused by other circumstances, such as long widowhood, etc. In treating these conditions, Soranus points out that any membrane or caruncles about the os which are causing stenosis must be removed, while the callosities and scirrhus must be attacked by an emollient and metasyncritic treatment.

In speaking of the results of inflammation of the cervix,

Soranus says that as we see in the case of the eyelids, which after an attack of inflammation become indurated, and have to be treated with acrid remedies so as to restore them, so after inflammation of the cervix there persists an irregularity and a hardness round the mouth of the womb, to cure which it is necessary to make application of a biting (δήξεως) nature in order to effect a change in the vitality of the tissues. If, however, the condition is obstinate, then the tissues must be attacked vigorously with white hellebore, and the patient must bathe at the thermæ (c. xlviii.).

In speaking of a menstrual flow which comes only drop by drop (c. xlviii.), our author says that if the uterine orifice is too small it must be enlarged, but he does not give any directions concerning the technique for dilating the cervix.

(*b*) *Erosion and Ulceration of the Cervix.*—In the chapter on uterine hæmorrhage (c. xlix.), Soranus mentions that an erosion which succeeds an ulceration may be the cause of the hæmorrhage. Later on in the chapter he alludes to the treatment of erosion of the cervix by means of trochischi, similar to those used for diseases of the rectum.

Soranus criticises the treatment sometimes adopted by the ancients of applying pessaries of such an irritating nature that they attacked the uterine tissue, producing deep ulcers, which healed with difficulty (c. xlviii.). Ulceration is said to cause atresia of the os through the cicatrix formed by the healing of the ulcer (c. xlviii.).

In chapter xvii. Soranus mentions, without describing, condylomata and fissures of the mouth of the womb; while in the chapter on inflammation of the uterus (c. lx.) he says that a rugose condition of the mouth of the womb is often found in those patients who have suffered from inflammation situated above the cervix.

(*c*) *Metritis, Perimetritis, Salpingitis.*—Chapter lx. deals with inflammation of the uterus. Soranus opens the chapter by saying that inflammation was called φλεγμονή by the Greeks, the term being derived from φλέγειν (to burn), and not from φλέγμα (mucus), as Democritus supposed.

The causes of inflammation of the uterus are attributed to chills, fatigue, abortion, and to labours that have been improperly attended. Sometimes there is a general inflammation of the whole uterus; at other times it is the mouth, the cervix, the fundus, the superior or inferior parts, or the sides of the womb. Some of the parts may be inflamed; at other times most of them may be involved.

The general symptoms are as follows: Fever, pain in the affected region, pulsation of the vessels, hypogastric swelling, heat and dryness of the pudendum, and tension in the gluteal region; heaviness about the loins, flanks and lower part of the abdomen, and of the groins and thighs; a feeling of cold, sharp, wandering pains, and torpor of the feet and coldness of the knees, with a sweating of the whole surface of the body. The pulse is small and very rapid, whilst the stomach is affected sympathetically, and the patient's spirits are depressed and she becomes faint. There may be headache and pain in the eyes, while the sufferer passes little urine and fæces. Should the inflammation become very intense, then the temperature rises still higher, and the hypogastric swelling may increase; then follow delirium, chattering of the teeth and convulsive movements.

The local symptoms are these: If the mouth of the womb is only partially inflamed, it closes with pain, but it is inclined towards the anus, and the tension about the groins and pelvic region is markedly increased.

If the mouth be not wholly but only partially inflamed, the

tension of the same region is somewhat increased, and the part of the cervix affected is painful to the touch, and the part also seems to project out, and to be inclined to the side opposite the side on which the lesion is. If the right side (of the cervix) is inflamed, it deviates to the left; and if the left side, to the right. The chief point to make out is whether the most acute pain coincides in position with the inflamed area, or whether it is situated on the opposite side, from sympathy. Soranus says that some have maintained that, while the lesion may be on one side, the inguinal and femoral regions of the opposite side are painful; while Demetrius said that the area of pain corresponded to the inflamed side. Soranus agrees with the opinion that, while pain is felt on the same side as the lesion, it may also cause pain on the opposite side, and that the spot where the pain is felt must be treated.

If the whole neck of the uterus be inflamed the pains become very severe, and a swelling forms behind the mouth of the womb. When the right side is inflamed the leg on that side becomes affected, and the groin swells; when the left side is affected the opposite side is the seat of pain, but as the lowest portion of the inflamed parts rests on the first part of the rectum, the passage of the fæces is difficult, and they are retained; also, there will be a desire on the patient's part to go to stool, but any movement will be attended with pain in the region of the lesion. Should the finger be introduced into the rectum, a tumour will be encountered, which will appear as though situated in the rectum itself. If the inflammation be situated in the upper portion (of the cervix), then the symptoms will be painful micturition and pain in the pubic and pectineal regions. Should the whole neck of the womb be affected, then all the above symptoms are present,

and on account of the greater amount of tumefaction the cervix becomes more prominent in the vagina.

If the sides of the uterine cavity be inflamed, then there will be pain in the flank corresponding to the lesion, and the pain will be augmented if the patient bends towards the opposite side.

If the inflammation be situated in the anterior and upper portion of the uterus, the chief pain will be located in the hypogastric region, and there will be a certain amount of swelling, together with painful micturition, or even retention of the urine. When the bladder is emptied, the swelling in this region will be much more easily palpated.

Should the inflammation be in the posterior and inferior portions of the uterine cavity, then the chief pain will be in the loins, and these pains will be much increased in intensity should the patient bend forward and to the side. A rectal injection is not readily admitted, and we find that the fæces are retained, and that the flatus does not escape; while if the finger be passed into the rectum it will encounter a swelling, which differs from that met with in inflammation of the rectum, inasmuch as pain does not immediately follow on the introduction of the finger, but only after pressure has been exerted for some little time, for the reason that the tumour recedes (before the finger), thereby allowing the bowel to assume its proper position, and also because the tumour changes its position if the patient is placed on her knees, none of these signs being encountered in inflammation of the rectum. Besides these symptoms, the patient has bearing-down sensations and a feeling of weight about the umbilical region and towards the loins. A rugose condition of the mouth of the womb is often felt in those who suffer from inflammation of the region above the cervix.

Soranus then proceeds to give the symptoms that denote inflammation of the uterus as a whole, and endeavours to draw up a differential diagnosis between inflammation in the hypogastric region of the abdomen accompanied by swelling, a local peritonitis unaccompanied by swelling, and inflammation of the whole uterus. He then brings the chapter to a close with a consideration of the treatment, which is practically the same as that given in chapter xlviii., where he considers "retention of the menses." Among the means at his disposal he mentions hot baths, hot drinks, counter-irritation, cupping, leeches, sitz-baths, fomentations, injections of hot oil and pessaries.

*Chronic Metritis.*—In chapter liii. our author, under the heading of "The Debilitated or Atonic Uterus," gives us a description of what is really chronic metritis and endometritis. He says that the uterus may get into a debilitated state as well as any other organ in the body. The periods are very profuse, irregular, and often occur three or four times in a month. Abortions or premature births are frequent in these patients. At the menstrual period there is pain in the lower part of the belly, and in the loins and thighs. This condition is liable to come on after repeated pregnancies, or if the uterus has been much distended whilst the woman carried her children. The treatment advocated is a general tonic, one with uterine injections, and the patient is advised to take exercise.

Chapter lvi. deals with an accumulation of gas in the uterus. The description of the malady evidently refers to cases of putrid infection and septicæmia following on parturition. Our author says that it occurs after a labour where the patient gets a chill, which causes the mouth of the uterus to become closed, a clot being by these means formed. After

giving various symptoms which point to peritonitis, our author deals with the treatment by injections, cataplasms, wet and dry cupping, sitz-baths, leeches, purgatives and uterine injections by means of a cannula. He then writes as follows: "If a blood-clot appears to be the cause of the gaseous accumulation the patient should have a sitz-bath, and immediately after the bath the midwife should introduce her finger, which should have been well oiled, into the uterine cavity, and should loosen the clot if one happens to be within reach by moving it gently from the place to which it is adhering, so that it may be removed without injury to the parts.

*Displacements of the Uterus.*—The mouth and neck of the womb may assume a position of version or inclination similar to that assumed by crooked fingers, the position being sometimes to one side, sometimes to the other, sometimes forward, sometimes backward, or the organ may flee upwards or fall downwards. The deviation may be recognised by introducing the finger into the vagina. Observation has shown that lateral deviation causes pain and numbness on the side corresponding to the deviation. Should the displacement be forward, urination is interfered with, and there is produced a tension in the pelvic region which prevents the patient holding herself upright. Should the displacement be backwards, then defæcation is difficult, and the patient sits with difficulty, and this is especially noticeable when the uterus is inclined towards the anus.

Little is said of the treatment of these conditions, the chapter being somewhat mutilated, and no mention is made of the mechanical pessary (c. lv.).

*Fibromyoma of the Uterus.*—In chapter lviii. Soranus gives a description of the mole (*μύλη, μύλος*), a description which

we believe applies to a fibroid tumour of the womb. We shall deal with this matter fully when considering the description of the mole that Oribasius has left us.

*Prolapse of the Uterus and Hysterectomy.* — Prolapsus (πρόπτωσις) uteri is called a menace of inversion (ἐκτροπή) of the womb; for it is not the case, as some think, that the uterus, being freed from the parts to which it is joined, falls downwards in a body, for a complete prolapsus cannot be restored. Some say that the whole uterus does prolapse after a blow, or some similar cause, the membranes and muscles which retain it becoming ruptured or relaxed, or being affected by loss of tone. Herophilus and the disciples of Hippocrates say that the mouth of the womb alone prolapses; others say that the whole uterus cannot (prolapse), for it could not regain its proper site unless the prolapse were only a partial one; and, indeed, inflammation of the mouth of the womb can resemble a species of prolapse. Others say that prolapse is produced through inversion, some maintaining that the external coat, others that the internal coat, prolapses.

Soranus then mentions some other theories about prolapse, and alludes to the diagnosis of inversion.

Our author says that if we are dealing with a case of complete or partial prolapsus, he does not approve of the treatment adopted by Euryphon of suspending the patient head downwards on a ladder for a day and a night, and of keeping her recumbent after this and giving her cold ptisan to drink. He holds that this suspension is intolerable to the patient, while the drink causes flatulence; he thinks that it is not the right thing to fix the time for any treatment (as cases vary). Again, he says that Evenor placed beef in the vagina, quite regardless of the fact that the putrefaction would

bring on ulceration; whilst Diocles, in the twelfth book of his work on the "Diseases of Women," replaces the womb by forcing into it air by means of a blacksmith's bellows.[1] Then he introduced into the vagina a pomegranate that had been peeled and soaked in vinegar. Irritation of the parts by a bag of hair to cause contraction is alluded to disparagingly, and fumigation is also mentioned; he also rejects Strato's treatment of filling the vagina with moistened cinders and castoreum.

In the treatment of a case, our author thinks that the following should be the procedure: The bowels and bladder should be emptied by an enema and catheter respectively, as retention of fæces and urine is common in these cases, because the displaced organ presses on these parts and so narrows the outlets. After this preliminary treatment the patient is placed on her back, the pelvis is elevated, the thighs flexed and separated. The prolapsed parts are then well smeared with hot oil, and a plug of wool the size of the vaginal canal is made ready by tying round it a piece of thread, after which it is dipped in some medicinal substance, such as posca, or warm decoction of myrtle, or mastich, etc.; then the whole of the prolapsed parts by gentle pressure are borne upwards until the uterus regains its normal position, and the whole of the plug is introduced into the vagina. Then a pad of wool soaked in astringent wine is applied to the vulva, and the abdomen is covered with sponges or wool soaked in vinegar, while bandages encircle the hypogastrium, pubes and loins, and the thighs are crossed one over the other. On the third

[1] Herrgott, in his translation of Soranus, has quite misunderstood the text of this passage (and of many others), as the following sentence will show: "Dioclès, dans son douzième livre des 'Maladies des femmes,' insuffle dans la matrice prolabée de la poussière de fer des forgerons et la remet en place" (p. 229).

day, the plug of wool being still retained in the vagina, the patient should be given a sitz-bath of warm dark astringent wine, after which she should again be placed on her back, the buttocks raised, and the plug carefully removed from the vagina and replaced by another, and a cataplasm should then be placed on the hypogastric region. Three days later the bath is again given and the plug renewed, and the treatment is continued until the patient has improved.

In those cases in which the uterus remains prolapsed, and is much inflamed and painful, it is better to irrigate it or to apply linseed-meal poultices, and after this preliminary treatment to proceed as directed above. If the case should prove very obstinate, local applications are to be persevered with, and the general health is to be attended to.

Soranus brings this chapter to a close with the following interesting observations. He says that if a portion of the uterus becomes black through the womb having remained prolapsed for a considerable period—and, indeed, it is said that women may reach an extreme old age and yet have a prolapsed uterus—then the remedies that are used in treating serpiginous ulceration are to be employed; and if the spots do not become healed, then the dark portions are to be resected, for it must be borne in mind that we have indeed resected the lobe of a liver or of a lung which has been gangrenous, following on prolapse of these organs.

Should the whole uterus become black, then the whole must be resected, this opinion being founded not only on the authority of those whom we have mentioned above, and who say that it can be extirpated without danger, but also because the portion that has become black is no longer an efficient part, but a foreign substance, and not fit to remain. But should the uterus become ulcerated from frequent prolapses,

and adhere to the labia, as some have related, it will be necessary in dealing with such a case to incise the adhesions in the same way as adhesions of the intestines with the peritoneum are incised (c. lxvi.).

*Inversion of the Uterus.*—Inversion of the uterus is mentioned by our author in chapter xxii., where he remarks that traction in the cord may produce inversion.

In the chapter on prolapse of the uterus (c. lxvi.), Soranus says that in a case of inversion of the whole periphery a rounded tumour is found projecting like an egg, but remaining within the vagina, or else protruding in front of the labia, its tint being at first red, then later on white.

### Diseases of the Vagina.

Atresia of the vagina is referred to in the chapter on the anatomy of the female organs (c. iii., *vide* above); while imperforate hymen (?) is mentioned (c. xlviii.), and directions are given to incise the membrane if this forms an obstacle to the escape of the menstrual fluid.

Except the above passages, Soranus hardly alludes to any affections of the vagina.

### Amenorrhœa.

Soranus opens chapter xlviii. of his work with the observation that among the diseases that ought to be submitted to a dietetic treatment we shall first cite retention of the menses, for the reason that menstrual purgation is the first function of the uterus. Menstruation accompanied by pain (dysmenorrhœa) is to be distinguished from mere suppression of the menses. Complete retention denotes the cessation of the menstrual secretion from the uterus; escape of the fluid drop by drop with pain denotes an obstacle to

the escape of the secreted fluid. The absence of menstruation is therefore not the same thing as the retention, the latter being always characterized by the absence of the flow; while, on the other hand, with the absence of the flow is not always conjoined a retention, as we plainly see in the case of young girls and old women and other cases. Therefore it is absurd to class cases as retention of the menstrual flow when there is an absence from the uterus of those fluids which should be secreted there. Menstruation may fail to occur in women who are formed normally, as in those who are abnormal: the total number, therefore, constitutes the GENUS; those in whom from one cause or another the flow is hindered are the SPECIES.

Our author then gives a list of conditions whose chief symptom is amenorrhœa. Among these we may note the youthful, the aged, the pregnant, singers, and those who take much exercise. Other women do not menstruate on account of a diseased condition of the uterus, or of other parts of the body, or of the two combined. Again, there may be atresia of the uterus, callosities, scirrhus, or inflammation; while ulceration may perhaps occasion an occlusion of the uterine orifice by causing cicatrices. Besides these local conditions, the general state of the health may be bad, and this may lead to absence of the flow, as also may fevers, prolonged sickness, hæmorrhage, and bleeding from the stomach and the nose.

We should, in dealing with any case, inquire carefully about the age of the patient, and whether she is pregnant or not; in fact, we should carefully weigh all the facts of the case in order to come to a right conclusion as to the cause of the retention, so that we may then set about the treatment in a logical manner.

In considering the treatment, we must remember that every

case of amenorrhœa does not require treatment, for in many cases the condition is quite normal. Should the flow be impeded by the hymen, it will be necessary to incise that membrane, and to remove any caruncles which hinder or prevent the escape of the fluid. Should the occlusion (of the os) be produced by callosities, fibrous masses, or an inflammatory condition, it will be necessary to diminish the inflammation by the employment of agents which soften and relax the parts. Should the uterine orifice be closed or deviated, it should be restored to the proper position. If our patient is affected by any general condition, such as obesity, fever, or any chronic or acute disease, then these conditions must all be attacked. Should the menses be absent as the result of general debility, then massage of the uterus is the proper treatment, because it strengthens that organ. If, however, we find that a certain amount of astriction and stagnation (στέλνωσις) occurs around the uterus itself, and as a consequence we get the menstrual flow only coming drop by drop and accompanied by pain, then we shall find in these cases inguinal, lumbar and pubic pains, also pains in the head, eyes, pelvis and legs, a swelling of the breasts, and an aversion to food. The treatment of these cases of dysmenorrhœa our author alludes to later on.

In treating any given case we should proceed as follows: When the pains commence or when the flow is quite absent, it is necessary to place the patient in a bed slightly warmed and not much exposed to the light, and to keep her there in quiet. Next compress gently the parts of the body in which are situated the pains, for in all parts of the body on which we exert pressure the internal heat diminishes, and the pressure diminishes the sensation of pain. Should, however, the pain not diminish, we must apply fomentation, hot com-

presses of wool or flax, oval-shaped vessels filled with hot water or bladders filled with hot oil; or we may apply cataplasms of flour heated in small bags, or sponges which have been soaked in hot water and then squeezed, and covered with cloths so as to prevent rapid cooling of the part. Furthermore, we may apply to the pubes, hypogastrium, loins and the vulva wool which is first soaked in oil and then squeezed. The regions treated should be maintained at an agreeable warmth by the frequent application of heat and by administering hot drinks.

Besides these remedies, linseed poultices, sitz-baths, pessaries and the douche may be used, and in the intervals of pain the patient should be allowed to sleep. The nourishment administered should be warm but simple.

Should, however, the pains be very intense before the third day has been reached, then the patient should be bathed, after which a sitz-bath may be given, followed by a vaginal injection of oil.

Should the patient be weakly, instead of bleeding her we may use the dry cup combined with minute punctures, so as to make a superficial scarification over the region where the pain is most intense; but should the pain be on the decline, then we may puncture the pubic or hypogastric regions.

Should the patient make but slow progress towards recovery, we may resort to leeches, and if we want an increased effect apply a dry cup over the bites.

Rectal injections of hot oil may occasionally be called for.

The patient having now become convalescent and the menstrual flow having come and gone, we may give her a more liberal diet, and, among other things, we may allow her wine, exercise, general massage, together with special massage to the uterus itself. With regard to this latter subject,

Soranus says that if during the time the friction is being applied to the uterus with the naked hand the patient experience pain, then the surfaces of the body, including the genital organs, should be sponged, and the friction should be increased in force as the parts become used to it and less tender. In addition to these means, our author directs that medicated oil should be applied to the surface of the body, and also to the mouth and neck of the womb. He also observes that the immersion of the patient in a bath of oil has a very soothing effect.

The second part of the chapter is devoted to a consideration of scanty menstruation accompanied by dysmenorrhœa, and our author endeavours to show an analogy between scanty menstruation, which comes, as it were, only "drop by drop," and retention of urine by an affected bladder, from which the water comes only drop by drop. Soranus thinks that five causes can be assigned to account for scanty menstruation: the uterine orifice may be too narrow; there may be a diminution in the (expulsive) force (of the uterus); there may be an oversupply of blood; or, lastly, the fluid may be in a mucous condition, or it may be thick.

Whatever may be the cause, it is the physician's duty to first ascertain the cause and to correct it. Thus, for instance, if the orifice of the uterus is too narrow, he must enlarge it. When the cause has been found and the proper remedies applied the dysmenorrhœa will disappear. As pains constitute the chief symptom, the following treatment is recommended to relieve them: Rest in a warm bed at the onset, wrap the hands and feet in bandages, foment the belly, hypogastrium and genital parts with warm fluids, and also place on the hypogastrium and pubes pans filled with warm fluid. If the pains persist, bleeding may be resorted to if the patient

be strong; should the pains still continue, linseed-meal poultices with turpentine may be employed, or sitz-baths, and at the same time the genitals should be sponged. Vaginal injections may also be tried. Should the case prove obstinate, we may resort to dry cupping over the belly and groins; and should this not succeed, we may try wet cupping, leeches and counter-irritants.

### Menorrhagia.

Soranus opens chapter xlix. with the statement that a difficult labour, an abortion, an erosion that has resulted from an ulceration of the cervix, a dilatation of the mouth, or a rupture of any bloodvessels, may be considered in the etiology of menorrhagia. He points out that hæmorrhage from a uterus or vagina is really dangerous, because it cannot be arrested by digital pressure or by picking up the bleeding vessel with the surgical hook, nor by the mere compression of tampons, nor by ligatures or sutures.

In order to better determine whether the blood is coming from the uterus or vagina, it is well to examine the patient by means of the speculum. The treatment for menorrhagia is as follows: The patient is placed in bed, the foot of which is elevated, and her thighs are crossed; cold sponges are applied to the pubic region and the vulva, and a cold sitz-bath may be given. If these means fail to relieve, then try a vaginal douche, and if the hæmorrhage still continues, then it will be necessary to plug the uterus by means of a probe and medicated lint; or a small sponge may be taken, oblong in shape, and introduced as far as possible into the uterus, so that it may suck up the blood poured forth, and so prevent clots forming, thereby helping to prevent inflammation. Cupping-glasses may also be applied to the legs, groins, belly

or vulva. In other cases pessaries may be used, and when we are dealing with a cervix that is eroded we may use suppositories similar to those used for the bowel.

### Leucorrhœa.

Leucorrhœa is dealt with by Soranus in chapter l., but as it contains nothing of special interest we shall not consider the matter here.

### Writers on Gynæcology referred to by Soranus.

*Alexander Philalethes.*—A Greek physician, who has been called by Octavius Horatianus, himself a writer on gynæcology, "Alexander Amator Veri." He lived at the end of the first century B.C., and was a pupil of Asclepiades. He is mentioned by Galen, and in two places by Soranus (cc. xlvii., l.). He was evidently a writer on gynæcology, for Soranus says: ὡς Ἀλέξανδρος ὁ φιλαλήθης ἐν τῷ πρώτῳ λέγει τῶν γυναικείων (c. l.).

*Apollonius Mus* was a follower of Herophilus, and lived in the first century B.C., being a contemporary of Strabo. Soranus mentions him as one of those who opposed the idea of "propriæ affectiones mulierum" (c. xlvii.).

*Apollonius Prusicus.* — Soranus alludes to this author as one who advocated that when the secundines were retained, the "partem prominentem esse apprehendendum atque ita extrahendum."[1] Nothing is, however, known of his life or his writings.

*Asclepiades.*—This being the name of several physicians, the particular one alluded to cannot be ascertained; possibly the right one may be Asclepiades Bithynus, who lived at Rome at the beginning of the first century B.C., and to whom we have already alluded. Soranus refers to him in several chapters, and mentions his classification of the "flux" thus, "altera enim rubra est, altera aquosa et alba" (c. l.). He also mentions his treatment of uterine suffocation (c. li.).

*Athenio Erasistrateus* is mentioned in chapter xlvii. with reference to his views on "propriæ affectiones mulierum." He maintained that there were special diseases of females.

[1] Apprehendendam (?), extrahendam (?).

*Chius.*—Of this writer we know nothing. Soranus mentions that Chius believed that the ovary had suspensory ligaments, and Soranus refers to a case of hernia of the ovary, that he himself had seen operated on, in support of the views of Chius (c. iii.).

*Cleophantus.*—A Greek physician of this name lived at the beginning of the third century B.C., and is quoted by Pliny and Celsus. If this was the writer alluded to by Soranus in chapter lxii., he must have written on gynæcology, for Soranus refers to his eleventh book "On the Diseases of Women."

*Demetrius Apameus.*—This writer, as his name implies, was a native of Apamea in Bithynia, and was a follower of Herophilus. He lived probably in the third or second century B.C. Soranus mentions him in several places, and alludes to his views concerning pelvic pain in cases of inflammation of the uterus (c. lx.).

*Demetrius Herophileus.*—This writer may be identical with the previous one, or he may be the author quoted by Heraclides. Soranus alludes to his views on the female flux and on difficult labour (c. lxii.).

*Dio.*—Of this writer nothing is known. Our author merely mentions that in cases of retention of the secundines Dio had resource to draughts which contained, among other ingredients, sage and myrrh.

*Diocles Carystius.*—This writer lived in the fourth century B.C., not long after the time of Hippocrates. He was in his day held in high estimation. He wrote several works, which we do not possess, but his famous letter to King Antigonus, "On Preserving Health," has been handed down to us in the works of Paulus. Soranus alludes to him in several places, and in chapter lxvi., which deals with prolapsus uteri, he quotes from Diocles' twelfth book "On the Diseases of Women."

*Evenor.*—This writer may have been the Greek surgeon mentioned by Heraclides. If so, he lived in or before the third century B.C. He is mentioned by Soranus as having placed "carnem bubulam in pudendum muliebri" in treating prolapse of the uterus (c. lxvi.).

*Euryphon Cnidius* was a celebrated physician who lived in the first half of the fifth century B.C., and was a contemporary of Hippocrates. He is supposed by Ermerins to have been the author of the spurious Hippocratic work "De Natura Muliebri." Soranus alludes to his treatment of suspending women by the feet to a ladder in treating prolapsus uteri (c. lxvi.).

*Hero* is a writer about whom we know nothing. He is mentioned by our author in reference to the conduct of a labour (c. xxi.).

*Herophilus.*—This author was one of the most celebrated practitioners of antiquity, and his name is inseparably connected with anatomy. He was a native of Chalcedon, and lived in the fourth or third century B.C. He is said to have vivisected 600 criminals, and, according to Galen, he was well acquainted with the anatomy of the uterus, though he does not appear to have recognised the Fallopian tubes. Soranus alludes to him as the author of a work on obstetrics (c. xlvii.), and he quotes his views in several places (c. lxvi.), and he is probably indebted to him for much of his chapter on "The Anatomy of the Womb" (c. iii.).

*Hippocrates.*—The genuine works as well as the spurious works on gynæcology of Hippocrates are quoted by Soranus.

*Mantius* was the tutor of Heraclides of Tarentum, and lived in the third century B.C. Soranus quotes his practice of tying a weight to the cord in order to detach the after-birth (c. xxii.).

*Miltiades Elæusius.*—Soranus says that this author was among those who considered that there were diseases peculiar to women (c. xlvii.).

*Mnaseas* lived in the first century A.D. Soranus quotes his view on menstruation (c. vi.).

*Moschion.*—Of this writer we know nothing. He is not for a moment to be confused with Moschion the abbreviator of Soranus. He is quoted by our author in reference to lactation (c. xxxiii.).

*Paris.*—This writer's views are quoted on lactation. We know nothing of his life.

*Simon Magnes* was a physician of Magnesia, whose name is mentioned by Herophilus, from whom Soranus takes his information with regard to some facts about difficult labour (c. lxii.). He lived about the same time as Herophilus, or before him.

*Sostratus.*—This may have been a surgeon of Alexandria, mentioned by Celsus, and who lived in the third century B.C. Sprengel says that he was a lithotomist, and in a passage quoted by Soranus he alludes to his manœuvre of introducing the finger into the rectum (as in the extraction of a calculus from the bladder) in dealing with a case of difficult labour (c. lxv.).

*Strato Erasistrateus.*—This writer was a pupil of Erasistratus

in the third century B.C. He wrote a work to explain the difficult words in the writings of Hippocrates. Soranus describes his method of fumigating the uterus (c. xxii.), and later on condemns his treatment of filling up the vagina with moistened ashes in cases of prolapse of the uterus (c. lxvi.).

*Themison.*—The physician alluded to by our author was probably Themison the originator of the Methodici. He lived probably in the first century B.C. He is said to have been the first physician who made use of leeches. Soranus quotes him in several passages, the most interesting being in reference to hysterectomy: "Non solum enim prolabitur, sed in nonnullis etiam resecatur, nec tamen resectus mortem adfert, sicuti observavit Themiso" (c. iii.).

*Thessalus* lived in Rome during the reign of Nero, A.D. 54-68. He was one of the founders of the sect of the Methodici. Soranus quotes his treatment of prolapse of the uterus (c. lxvi.).

## CHAPTER X.

### THE MEDICAL PROFESSION IN ROME.

Before passing on to examine the works of Aretæus and Galen, we shall pause for a moment to glance at the advances that had been made in general medical science and the growth of specialities, including gynæcology, among the Roman people at the end of the first century A.D.

Italy 600 years before the days of the Cæsars consisted of a number of rival States, which gradually became subjected, and then amalgamated, to form part of the Roman Empire. The arts and sciences had slowly become cultivated, and ultimately medicine had grown in favour. From superstitious rites and ceremonies, entirely in the hands of the priests, it had slowly emerged under the guidance of expatriated Greeks, and had in time come to be regarded as a necessary part of the advanced civilization of the Roman people.

We have already noticed the advent of Archagathus, Asclepiades and Themison to Rome, and we have in addition to note that, following on the Punic wars, Rome became the centre to which every adventurer, scholar or charlatan gravitated, in the hope that he might palm off his knowledge on a people now ready to adopt new ideas, whether in knowledge, vice, pleasure or science. Puschmann well remarks: "When

the medical art of the Greeks was transplanted to Rome, medical teaching became possessed of material borrowed from the rich medical literature of the Greeks, and also assumed the external form which it had in Greece. The Greek doctors who had migrated to Rome there acted as teachers of their art, and introduced the regulations of their home. As in Greece, so also in Rome: the practice of medicine was a free profession, which everyone who thought he possessed the necessary ability was at liberty to carry on."

To the Greeks, then, Rome owed her medicine. The Greek language was studied, and the Greek medical writers were widely read in order that the Roman doctors might compete successfully with the Greek emigrants. Professional medicine in Rome from the first century A.D. was henceforth to be Greek medicine transferred to its new home, and this Hellenic influence was destined to continue for the next six centuries.

With regard to the actual practice of medicine, we find the wealthy and those who were too ill to leave their beds being visited by the medical man, accompanied by a troop of pupils and assistants. This custom has been dealt with by Martial in his epigram to Symmachus:

> "I droop'd; straight Symmachus to me does hie,
> An hundred quacks bearing him company;
> An hundred frozen hands my pulse did crave;
> Before I had no ague, now I have."

Patients were also seen at the Iatreia, which were the town-houses or dispensaries of the doctors. Here they were treated and operated on, and here occasionally patients resided. Hospitals did not, however, exist at this time, though we know that buildings were erected at the temple of Asclepius at Epidaurus to receive cases of sudden illness (such as women in labour), lest the temple itself should be defiled by the birth of the child.

It was during these first years of the Augustan period that specialism became very common. It had become common enough in Egypt ages before, but it now developed afresh, because the Roman doctors found that they were unable, and perhaps unwilling, to acquire a full knowledge of every branch of medicine, and so they sought to cloak their ignorance by pretending to a knowledge of an individual subject. This could only lead to great errors, and it soon brought medicine into deserved contempt. Martial ridicules this state of things in the following epigram, addressed to Gallus:[1]

"Gallus, thou'dst have me thee attend alway,
To pass th' Aventine three, four times a day.
Cascellius remedies to the teeth applies,
Hyginus to all evils of the eyes;
Fannius defluxions of all sorts can stay,
Eros the scars of branding clear away;
Hermes inveterate ruptures will insure:
Hast thou the skill a broken State to cure?"

We are not surprised to find that among the specialties gynæcology had a prominent position, and the gynæcologists were called *ἰατροὶ γυναικεῖοι*. While gynæcology was practised by physicians, it is quite evident that midwives frequently attended to the simpler diseases peculiar to women, and in some instances they wrote treatises on gynæcology. Nor could this be regarded as an innovation, for as far back as the time of Hyginus we find one Agnodice, a midwife of Athens, disguising herself in man's attire so that she might attend lectures in medicine and the diseases of women, and after a course of instruction she practised as a gynæcologist. As it was contrary to the Athenian law, she was prosecuted, but she was saved by the wives of some of the chief men of Athens coming forward on her behalf. Besides Agnodice, we

[1] Martial, Book X., 56.

have Sotira, who wrote a work on menstruation, which is preserved in the Library of Florence; also Lais and Elephantis, who wrote on abortion and the diseases of women. Salpe, a native of Lemnos, was also a writer on gynæcology; while Aspasia is mentioned by Aetius as the author of several of his chapters in the work that we shall examine later on.

We have seen that Hippocrates refers to midwives practising as gynæcologists, while we have already given a quotation from the work of Hippolytus on the same subject.

We also know that women studied medicine systematically during the Roman period, and these were called *feminæ medicæ*. These also doubtless enjoyed a considerable gynæcological practice. Martial alludes to them in his epigram to Leda (B. XI., 71), while other writers of the period refer to the *medicæ*, occasionally in anything but complimentary terms, and class them among the abortionists. Later on in the fourth century Theodorus Priscianus, who wrote a treatise on medicine in four books, the third book of which is devoted to gynæcology, dedicated this third volume to one "Victoria, the gentle servant of my art" (*artis meæ dulce ministerium*). Melanie Lepinska has recently written on the subject of "Les Femmes Médecins à Rome,"[1] to show that the *medicæ* are not to be confounded with the midwives. She says: "Mais les recueils d'archéologie sont une véritable mine de documents relatifs à l'existence des femmes médecins à Rome. Dans la capitale, en Italie, en France, dans la Péninsule ibérique, les inscriptions funéraires des medicæ ont été signalées. Ces collections d'inscriptions lapidaires témoignent nettement que la médecine était exercée par des femmes qu'il ne faut pas confondre avec les ornatrices ou avec les

[1] "Les Femmes Médecins à Rome," par Mdlle. Melanie Lepinska (*Le Progrès Médical*, 29 Avril, 1899).

accoucheuses désignées sur plusieurs monuments par le nom *d'obstetrices*. Les monuments épigraphiques sont d'une si minutieuse exactitude lorsqu'ils mentionnent les professions, qu'il est difficile d'admettre qu'on ait confondu la femme médecin avec l'accoucheuse."

It now only remains to us to mention some of the more important operations and the instruments employed in executing them, in order to have some idea of the stage to which operative surgery and gynæcology had advanced at this period.

The surgeons of the Alexandrian schools having had every opportunity of studying anatomy, and having been familiar with the positions of the organs of the body from vivisection, gave the first real impulse to operative surgery.

The surgeons of Rome frequently travelled to Alexandria to study in the schools, especially if they desired to become specialists, and there they could with ease acquire a fair knowledge of anatomy.

The first real advance in surgery was made when the ligature was introduced to control the hæmorrhage from the severed vessels during an operation, and we know that the vessels had been sufficiently well studied to distinguish the arteries from the veins. Celsus (B. V., c. xxvi.) is one of the first writers to allude to the ligature, but he does not mention the material of which it was composed. Speaking of hæmorrhage from a wound, he directs that if pressure or astringents fail to arrest the bleeding, then the vessels from which blood is coming must be seized (*venæ apprehendendæ*), and a double ligature is to be passed round the vessel and tied, and an incision is then to be made between the ligatures. Somewhat later Heliodorus and Galen describe torsion of the small vessels, after having seized them with a hook. The ligature

may be said to have reached the acme of its fame in ancient days when the brilliant Antyllus (350 A.D.) employed it in his well-known operation for aneurysm.

The ligature being in daily use, operations that may have been suggested long before this period were now attempted, and accordingly we find that such extensive procedures as resection of the whole humerus and removal of the inferior maxilla were now carried out.

Heliodorus, a contemporary of Juvenal, appears to have practised amputation by the flap method, while plastic surgery was everywhere in vogue. Tracheotomy and operations for curing cataract were attempted with success, while lithotomy and lithotrity were common operations in the hands of specialists. An abscess of the liver would be opened if diagnosed, and the radical cure for hernia and for stricture of the urethra was not uncommon; while specialists operated on the female genital organs, removing small growths from the cervix, sometimes attempting hysterectomy, and performing plastic operations in cases of atresia and other conditions, for the speculum vaginæ was in use before the year 79 A.D., in which year Herculaneum and Pompeii were destroyed, for in the ruins of these cities a three-bladed speculum was discovered in the beginning of this century. In obstetrical cases, when the necessity arose, the child was removed by the operation of embryotomy, and Cæsarean section was occasionally practised.

Of the instruments in use we take the following list from Puschmann: Straight and curved needles, probes of various kinds, hollow sounds, curved and toothed forceps, catheters with a gentle S-shaped curve, several forms of clips—among them some with clasps and slides—conical and spheroidal cupping instruments, sharp and blunt hooks, pronged and

disc-shaped cauteries, knives, spatulæ, lancets, bistouries, rectal and vaginal specula. Of the specula, some were in one piece, some in two or three. In the year 1882 one of four parts was found. It was composed of two straight and two S-shaped branches.

With regard to the probe, or specillum, which we shall find mentioned frequently in the gynæcological works that we shall examine, we may note that the specillum (μήλη) is reputed by Cicero to have been invented by the Arcadian Apollo, who also was the first to bind up a wound. Seven varieties are figured in the work of Professor Vulpes in one plate, with ends obtuse, spoon-shaped, flat and oval, flat and square, flat and divided.[1]

[1] Berdoe, "The Origin and Growth of the Healing Art," p. 245.

# CHAPTER XI.

## ARETÆUS.

Aretæus the Cappadocian, as it is usual to style him, has by his work on "Acute and Chronic Diseases" earned for himself a lasting reputation among the writers of ancient medicine. English readers are fortunate in having a most excellent edition of his works published by the Sydenham Society, from the translation made by the learned Francis W. Adams, one of the few English physicians who has earned a world-wide reputation for classical knowledge. We shall chiefly rely on Adams for the short account we are about to give of this author.

Nothing definite can be determined respecting the age in which Aretæus flourished, beyond a probable approximation to the period. The fact that Galen does not mention Aretæus would imply either that Aretæus was a contemporary or that he flourished at a later period. If our author did live at a later period, why do we find no reference in his works to Galen, who had written at length on the same subject, and who was *facile princeps* as a medical authority? The probable explanation, as Adams points out, is that while in the days of Horace, Virgil and Ovid authors mentioned each other in terms of the greatest kindness, yet in the age of Quintilian,

who lived but a short time before Galen, contemporary writers did not notice one another by name. A good example of this neglect is to be found in the case of Dioscorides and the elder Pliny, who take not the slightest notice of each other, though both handled the same subjects. Adams says: "I am clearly of opinion, from my long familiarity with the works of Galen and Aretæus, that one can decidedly detect a corresponding coincidence between the literary and professional views of these authors. Both had chosen Hippocrates for their model, and had their minds thoroughly imbued with his opinions. . . . Both display a great acquaintance with sphygmology, and use the identical terms in describing the varied conditions of the arterial pulse. Both possess a more intimate knowledge of anatomy than any of the authorities on ancient medicine."

Since Galen was born A.D. 131, we may take it for granted that Aretæus flourished about the middle of the second century of the Christian era.

He wrote on Fevers, Surgery and Pharmacy, and on Acute and Chronic Diseases, the latter being the only work that has come down to us. Scattered through its pages are some observations on the diseases of women, and also some remarks on abdominal cases. Thus, in the second book of "Chronic Diseases," chapter i., we have the following interesting passage: "This other form of dropsy is known; small and numerous bladders full of fluid are contained in the place where ascites is found. But they also float in a copious fluid, of which this is a proof: for if you perforate the abdomen so as to evacuate the fluid, after a small discharge of the fluid a bladder within will block up the passage; but if you push the instrument farther in the discharge will be renewed. It is said, however, that in certain cases such bladders have come

out by the bowels." This is, of course, a description of hydatid cysts of the abdomen with daughter cells.

Our author also gives a description of an operation for abscess of the liver.

We shall now proceed to the passages bearing on gynæcology to be found in this work of Aretæus.

### "Chronic Diseases," B. II., c. xi.: On Affections of the Womb, or Hysterics.

The uterus in women is benefited by purgation and parturition, but it is the common source of innumerable and bad diseases: for not only is it subject to ulcers, inflammation, and the fluor, but if the whole organ be suddenly carried upwards it quickly causes death. . . . The chronic affections are the two species of fluor; hardness; ulcers, part mild, but part malignant; prolapsus of the whole or of part.

Then follows a description of the red and white fluor. After this the writer says:

Ulcers are formed in the womb, some broad and attended with tingling, which being close together are, as it were, a superficial excoriation; pus thick, without smell, scanty. These ulcers are mild; but there are others deeper and worse than these, in which the pains are slight, pus somewhat more abundant, much more fetid, and yet, notwithstanding, these also are mild. But if they become deeper, and the lips of the sores hard or rough—if there is a fetid ichor and pain stronger than in the former case—the ulcer corrodes the uterus; but sometimes a piece of flesh is cast off and discharged, and the sore, not coming to cicatrization, either proves fatal after a long time or becomes very chronic. The sore gets the appellation of phagedæna. The sores also

are dangerous if in these cases the pain gets accelerated and the woman becomes uneasy. From the sore there is discharged putrid matter, intolerable even to themselves; it is exasperated by touching and by medicines, and irritated by almost any mode of treatment. The veins in the uterus are swelled up with distension of the surrounding parts. To the skilled it is not difficult to recognise by the touch, for it is not otherwise obvious. Febrile heat, general restlessness, and hardness is present, as in malignant diseases; the ulcers, being of a fatal nature, obtain also the appellation of cancers. Another cancer, no ulceration anywhere, swelling hard and intractable, which distends the whole uterus; but there are pains also in the other parts where it drags to it. Both these carcinomatous sores are chronic and deadly, but the ulcerated is worse than the unulcerated, both in smell and pains, in life and in death.

Sometimes the whole uterus is protruded from its seat and lodged between the woman's thighs—an incredible affliction. Yet neither has the uterus not been thus seen, nor are the causes which produce it such as do not occur. For the membranes which are inserted into the flanks, being the nervous (ligamentous?) supporters of the uterus, are relaxed; those of the fundus, which are inserted into the loins, are narrow; but those at its neck, in each side to the flanks, are particularly nervous and broad, like the sails of a ship. All these then give way if the uterus protrude outwardly, wherefore the procidentia generally proves fatal: for it takes place from abortion, great concussions, and laborious parturition. Or if it do not prove fatal, the women live for a long time, seeing parts which ought not to be seen, and nursing externally and fondling the womb. . . . Sometimes the mouth of the womb only, as far as its neck, protrudes, and retreats

inwardly, if the uterus be made to smell to a fetid fumigation, and the woman also attracts it if she smells fragrant odours. But by the hands of the midwife it readily returns inwards when gently pressed and if anointed beforehand with the emollient plaster for the wound.

B. II., c. i., is devoted to the consideration of Dropsy. The writer remarks that sometimes the dropsy forms in small spaces, such as the head in hydrocephalus, or in the lungs, liver or spleen, or in the womb; and, in regard to the latter, if the mouth of the womb relax at all, it discharges the fluid outwardly.

"Acute Diseases," B. II., c. ix.—In this chapter there are some remarks on the treatment of hysterical convulsions, the use of uterine injections, vaginal pessaries, the abdominal binder, dry cupping over the loins, bleeding from the pubic vein, the sitz-bath, and reference to some therapeutic agents.

In B. II., c. xi., of "Acute Diseases" there are some remarks on so-called hysterical suffocation, in which the influence of Hippocrates' teaching is plainly seen.

## CHAPTER XII.

### GALEN.

Claudius Galenus was born at Pergamus, in Mysia, A.D. 130. His father was a well-read man, and destined his son for a philosopher, and from him Galen received his first instruction. In his seventeenth year he began to study medicine, and visited, among other places, the medical schools of Alexandria; and on returning to his native city he was, at the age of twenty-nine, appointed medical attendant to the School of Gladiators. Five years later he visited Rome, where he met with great success as a physician, though he seems to have incurred the envy of his brother-practitioners. Leaving Rome, he returned to his native city; but he was soon summoned back to attend the Emperor M. Aurelius, whereupon he settled there, and began teaching, practising, and composing his various works. It was during this period that he wrote his celebrated treatise "De Usu Partium Corporis Humani," the fourteenth book of which deals with the genital organs of women.

The date of Galen's death is not known for certain; it probably took place about A.D. 200.

The influence that Galen has had on medical science has been greater than that exercised by any other writer. Hippocrates, the father of medicine, left an undying name,

and no writer is more respected for his genius; but the range of his genuine works was limited. Galen, on the other hand, was one of the most prolific writers that ever lived. He is said to have composed at least 400 distinct treatises, and, as these deal with every branch of medicine, his works were for centuries the standard authorities on all things medical. This influence was kept alive, when other writers were forgotten, through the high estimation in which Galen was held by the Arabic writers, whose compilations and translations were the chief medical works of reference from the seventh century up to the period of the Renaissance, and even after. Of the many treatises composed by Galen, about eighty-three are admitted as genuine, nineteen are doubtful, forty-five spurious. Besides these there are some eighty-five which consist of commentaries, fragments, and short pieces.

Amidst this wealth of ancient learning, we look in vain for additions to gynæcology. Our author has left no systematic treatise on this subject; but, as it would have been impossible for a writer whose works are so encyclopædic to have entirely neglected this branch of medicine, we accordingly find scattered throughout his various writings remarks concerning the diseases peculiar to women. These, however, generally display such a superficial knowledge of the subject, and are so wanting in detail, that they are of little use for our present history.

Among the authentic works that Galen has left us is the one entitled "De Usu Partium Corporis Humani," in seventeen books; the fourteenth book is devoted to the genital organs.

This work contains little of interest from a gynæcological point of view. It is really devoted to the physiology of the genital organs, and Galen, like other ancient authors, sought

to establish an analogy between the male and female parts of the genital organs.

In the eleventh chapter of this work he says that the canal of the uterus that receives the sperm of the male is called the neck, and it opens into the vagina. The cornua are for conducting the sperm of the female's testicles; these horns are turned towards the iliac fossæ, and growing gradually attenuated, they terminate by the extremities becoming very narrow, each being attached to an ovary (*καθ' ἑαυτα διδύμω*) situated on either side.

The work entitled "De Locis Affectis," in six books, is perhaps the one which is held in highest esteem of all that Galen has left us. The fifth chapter of the sixth book is devoted to affections of the genital organs of woman. The greater part of the chapter is taken up with the subject of hysteria.

Our author seeks to explain that the various displacements of the womb are due to the retention of the menses, which causes a congestion of the ligaments. Should the ligaments on both sides of the uterus be equally affected, then the uterus may be displaced, but without any deviation; but if one side is affected more than the other, then the forces become unequal, and the tension on one side being more than on the other, deviation of the uterus follows.

If the menses are suppressed we may get various results. Should the patient, among other symptoms, have nausea and a deranged appetite, the midwife must examine the neck of the womb with her finger, and if she finds it closed, but without being hard, then this is a sign that the patient is pregnant. When the mouth of the womb is closed, and the neck is at the same time hard to the touch, this points to the uterus being diseased, and the midwife must then make a

careful examination, by touch, to find out towards which part the uterus is inclined or displaced; for it will be there that the uterine disease will be found.

In some cases there will be pain and bearing down on the affected side, the pain affecting also the hip region, while the patient will limp with the leg of the affected side in walking.

When the menstrual suppression lasts for some considerable time, and no flow whatever occurs, sometimes a swelling will form in the flank, which is a sign to indicate inflammation in the deep parts. In other cases an abscess forms at the inferior extremity of the flank (anal region?), similar to the abscess that forms in men in that region. Sometimes the swelling described above suppurates and calls for an incision (pelvic abscess after cellulitis?). Galen remarks that he has known the colon to open in this region after suppuration (probably he refers to cases on the left side, when suppuration supervenes after extraperitoneal hæmatocele, etc., and the pus burrows into the rectum and on to the surface, thus making a fistula). He remarks that such openings in the colon heal easily, but that wounds of the uterus heal slowly.

Our author then proceeds to deal with cases of menorrhagia. After giving the symptoms, he says that if the blood should escape pure, as when a person is bled, we must make an examination to be sure that there is no erosion of the uterus present; for it is to be observed that an erosion forms sometimes on the cervix, sometimes in other situations.

The chapter ends with remarks on hæmorrhage in those who are pregnant.

The short account of the diseases of women in this chapter is clearly derived from the works of Hippocrates ("Diseases

of Women," B. I., c. i.-vii.; "Aph.," B. V., xlvii., lvii., lxi., etc.).

Of the anatomical writings left us by Galen, one book, "De Uteri Dissectione," is devoted to the anatomy of the uterus. Beside this work Galen wrote an anatomical work, "De Anatomicis Administrationibus," in fifteen books. The first nine of these have been published, but the last six are not extant in the original Greek or Latin translations, though there is a complete copy in Arabic in the Bodleian Library at Oxford. The fifteenth book of the work is devoted to the organs of generation.

Besides the passages alluded to above, which deal with gynæcology, we find here and there throughout many other of Galen's works short notices of remedies suitable for different affections of women, such as the retention of the periods, excessive flow, flux, erosion, ulceration, suffocation, cancer, etc.; *vide* "De Remed. Parab.," II., c. liii., III., cc. xciv., cxci.; "De Method. Medendi," XIV. vii.; "De Causis Sympt.," III. ii.; "De Comp. Pharmac.," IX. x.

Again, in the works of Hippocrates that Galen criticised, wherever a passage occurred which dealt with gynæcology, Galen wrote a short commentary.

The spurious works "De Catharticis," "De Simpl. Med.," "Liber Secretorum," all contain short passages relating to remedies for various diseases of women.

Among these spurious works is one devoted to gynæcology. Its title is "De Gynæceis, id est Passionibus Mulierum." This work merely mentions the particular disease, and then gives formulæ for appropriate remedies.

Among the spurious works we have "De Anatomia Vivorum," "De Anatomia Parva," "De Compagine Membrorum," all of which contain short descriptions of the womb and ovaries.

Of Galen's work "De Dissectione Uteri" we propose to give a translation at the end of this chapter; here we shall give a résumé with some remarks on various passages.

The first chapter deals with the situation of the uterus, and the author remarks that the uterus reaches up towards the umbilicus; this together with a passage from the third chapter, "but in woman and other animals which have a womb similar to a woman's, *such as the goat and the cow*," show us clearly that Galen had no real acquaintance with the dissection of the uterus of women, but that he had relied on other authors for his facts, and had drawn on his comparative studies. That he had dissected animals is clear from certain passages in his works, for he tells us that he had dissected monkeys, an elephant, mice, birds, and fish: "Humanos uteros non incidit, sed simiarum aliorumque animalium" (Kuhn).

In the second chapter, after making some remarks on the size of the uterus, which are, as a rule, accurate, he ends the chapter by endeavouring to show that the labia are analogous to the prepuce of the male. Galen followed other writers in his endeavours to draw an analogy between the organs of the two sexes, supposing the organs in the female to be similar to those in the male, only less developed. On this theory he supposes the uterus to correspond to the scrotum, and the ovaries to the testicles, while the external genitals correspond to the prepuce.[1]

In the third chapter he deals with the form of the uterus; he describes it as "bisinuatus," and he gives a description of the pampiniform plexus.

In the fourth chapter he deals with the ligaments, and describes the levator ani, and he remarks that all these bands

[1] "De Usu Part.," XIV. vi.

are slack, so that the uterus can be moved and changed very considerably.

The arteries and veins are considered in the fifth chapter. He tells us that uterine veins enter the vena cava on either side; this is an error, as we know that on the left side the uterine vein enters the left renal vein. He remarks "that these are four vessels which are not always in women, but which occur in some cases (according to Herophilus), and, after arising from those vessels which extend to the kidney, enter the uterus." This arrangement of the vessels is met with. Quain says: "The spermatic artery is frequently derived from the renal, occasionally from the suprarenal, on one side. . . . Two spermatic arteries are not infrequently met with on one side; both these usually arise from the aorta, though sometimes one is a branch of the renal artery."

Chapter vi. is devoted to a description of the tunics of the womb, which is more ingenious than correct.

In the next chapter Galen remarks on the hardness of the cervix, and states that under ordinary circumstances the os will barely admit of a fine probe. He also makes some remarks on displacement of the womb.

Chapter ix. is devoted to a description of the ovaries and Fallopian tubes. He calls the ovaries ὄρχεις, which term corresponds to testes; he alludes to the fundus as πυθμήν, and to the horns. He calls the Fallopian tubes the ἀγγεῖα τὰ σπερματικά, and describes how they commence near the ovaries as dilated tubes, but on approaching the uterus they become narrow. He alludes to the fact that the ancient authors did not understand that these tubes opened into the uterus, and he wonders that some of these writers did not recognise this fact: for he says that Herophilus was an

excellent dissector, and had human subjects as well as animals to dissect.

The last chapter deals with the chorion and fœtal membranes.

Summing up Galen's position with regard to gynæcology, we may say that he has left us nothing original on the subject, and little of interest from the works of others. It is probable that his busy life did not permit him to follow up the subject of gynæcology to any extent, least of all in its operative details; for it is certain that when he settled permanently in Rome he took up the position of a physician. He says: "Aggressus vero fuissem aliquando ipse plurimum experire ejus modi curationis rationem, si perpetuo in Asia mansissem; sed quum Romæ plurimum agerem, civitatis morem sum secutus, permissa iis, quos chirurgos vocant, maxima ejus modi operum parte" ("De Meth. Med.," VI.). We accordingly find throughout his works only superficial remarks on gynæcological subjects, as he generally contented himself with merely mentioning some of the commoner complaints of women, such as suppression of the menses, menorrhagia, and the flux, after which he gives a few receipts for their treatment; consequently, we find no systematic treatise and no operative details of our subject.

With regard to his works on the anatomy of the uterus and its appendages, his descriptions, being second-hand or derived from animals, are inferior in value to the account and excellent description left us by Soranus. To Galen, however, must be given the credit of clearly pointing out that the Fallopian tubes were pervious, and that they conveyed the ova to the uterus. These points Soranus entirely missed. Whilst many of the ancient writers thought that the uterus consisted of two cavities separated from one another by a

membrane, Galen appears to have been better informed; yet he certainly imagined that the human uterus was "bicornis," and he clung to the theory that the male was formed in the right side, and the female in the left side, of the uterus. He also made the mistake of supposing that the umbilical cord had two arteries and two veins.

### Galeni de Uteri Dissectione Liber.

*Cap. I.: The Situation of the Uterus.*—This book treats of the position and size of the uterus; of its shape; where it hangs and by what it is nourished; with what it is connected and what it touches; what holds it together; and what is produced in the uterus, when a woman is pregnant, around the chorion or membranes surrounding the fœtus. The uterus is placed within the peritoneum between the bladder and rectum, resting on almost the whole of the latter, and reaching far beyond the bladder towards the umbilicus, on which is its fundus (*πυθμήν*); whilst towards the pudendum the bladder extends beyond it (the uterus) by the length of its neck. But the bladder in women is placed close to the pubes, and has a shorter and a wider neck than that of the male, and being placed between the bones called the bones of the pubes, it connects with the vulva near its external and superior limit.

After this Galen gives a description of the rectum and sacrum.

*Cap. II.: Size of the Uterus.*—The size of the uterus is not the same in all cases, for, indeed, it is much smaller after giving birth to a child; but it is larger when the woman is carrying the child, and it is much smaller still in those who have never conceived, and it is in proportion to their age in the case of those who have not yet had the opportunity to

indulge their passions. Also in those not given to venery it is always smaller.

Galen then says that the fundus of the uterus is close to the umbilicus, and the cervical end is eleven fingers' breadth from the vulva. The chapter ends with the statement that the female pudendum (*τὸ αἰδοῖον*) is the open space lying between the pubic bones, and that the pudendum has externally a cuticular process (labia) analogous to the prepuce of the male.

*Cap. III.: Form of the Uterus.*—The form of the uterus, both considered as a whole, and especially as regards its fundus, is similar to that of the bladder; but it differs from that organ inasmuch that it has mammillary processes from either side, which face towards the corresponding ilia. Herophilus likens these lateral processes to the curve of a semicircle; Diocles to growing horns, and therefore called them cornua, from their likeness to horns. Eudemus called them "the coils" (*πλεκτάναι*), not mentioning whether he compared to coils the bloodvessels, which are twisted and bunched up in the locality, or the processes themselves. By Praxagoras and Philotimus they are called sinus (*κόλποι*), whence they say that the uterus of a woman is bisinuatus, whilst of animals which bear many young they say it is multisinuatus.

Galen then observes that in the case of pigs and animals that bear many young at a time these animals have "multos sinus." He does not consider that the name sinus is a suitable one for women, for, in the first place, the uterus in pigs is curved and sinuous, and, in the second place, the young are conceived in the sinus. But in women, and other animals which have a womb similar to a woman's, such as the goat and the cow, the fœtus is found in the main cavity of the

uterus, not in the cornua, which are much too small for a body the size of a fœtus.

The remainder of the chapter contains nothing of interest to us.

*Cap. IV.: The Parts adjacent to the Uterus.*—This chapter opens with some general statements such as, "Of the parts that are nearest the uterus, some merely touch it, but do not coalesce with it, while other parts cannot be separated from it except by dissection;" "that the uterus is joined to many parts, and that when it is greatest it fills the iliac spaces and the abdomen, while it is at the same time in contact with much of the intestines." The uterus is connected with the rectum and bladder by the intervening tissues of a fibrous nature; "these are," the author remarks, "mere connecting links to the bladder." The uterus is also connected by certain strong bands of muscles having strands of sinews. It is suspended by equally large masses of tissue also from the lumbar vertebræ, for processes, worthy of note, of the great lumbar muscles descend on either side, and are then carried to each side of the uterus, to the neck of the bladder, and to the seat. All these bands are slack, so that the uterus can be moved and changed very considerably. There are, besides, connecting bodies which are rooted on the uterus, and which partly bind it together and ramify through it; important among these are the nerves proceeding from the dorsal marrow, and which partly provide the uterus and fœtus with nourishment and sustenance, as, for instance, the veins and arteries.

The uterus is only joined and united to the bladder and to the rectum at its neck, merely by membranous tissue filled with bloodvessels (ἀρτηριώδεις), together with some fat. It can be cut away from these organs, but the coalescence is so

exact that there appears to be but one and the same fleshy tissue.

The testes (δίδυμοι) and the spermatic vessels (σπερματικὰ ἀγγεῖα) are closely connected with it.

The womb joins the pudendum at the termination of its cervical portion.

Then follows some further remarks on its connections, but these have but slight interest for us.

*Cap. V.: Arteries and Veins of the Uterus.*—Two veins and two arteries spring from the vena cava and the large artery lying over it, one of each on either side; the vein comes from the vena cava, the artery from the artery. The one brought from the right goes to the right of the uterus, the other from the left goes to the left of the uterus; and before the vessel enters the uterus it gives off some branches to the testes (ovaries), and after this, indeed, each vessel goes to the body of the uterus to ramify in it. These four vessels are placed together a little below those that run to the kidneys, and the veins are much larger than the arteries. But there are four other vessels which are not always in women, but which occur in some cases (according to Herophilus); these spring from the vessels running to the kidneys and enter the uterus. "I have not been able to find an example of this in any other animals except occasionally in monkeys, but I don't doubt that Herophilus may often have found these in women, for he was well versed in all other matters relating to the art (of medicine), and he had a very excellent knowledge of dissection, which was not derived chiefly from the lower animals, as the knowledge of most anatomists is, but from the human body."

This observer says that the vessels which nourish the uterus are joined into the membranes, from which we have

remarked that the bladder hangs; and he noticed that the membranes become thicker, harder, and rougher the more frequently the uterus bears young. These facts may be observed also in other animals. Moreover, there are other veins and arteries which are joined to the neck of the womb from either side of the uterus (uterine arteries), being separated from that vessel which supplies the pudendum and seat (internal pudic artery).

The uterus draws its nourishment from and is traversed by these vessels.

*Cap. VI.: The Tunics of the Uterus.*—The body of the uterus consists of two tunics placed contrariwise. The more nervous (*νευρωδέστερος*) is placed externally, the more venous is placed internally, and each is of such a nature that it can easily stretch very much and again contract. The external is simple and is single; the internal one is a double tunic, whose parts are closely connected, yet do not unite and form one, but only adjoin, and are held together by the adjacent tunic. If, then, you wish to separate them by dissection, they appear to you as two uteri placed under one and the same tunic; for you will not be able to further separate this tunic into two divisions, as the uterus was in the first instance. The venous tunic is rather rough on its inner surface, especially at the fundus. The nervous coat which surrounds this (venous one) is much thicker than the tunic of the urinary bladder, and it is interwoven with many veins and arteries.

*Cap. VII.: Cervix Uteri.*—But the neck of the uterus, being muscular, consists of flesh that is hard and cartilaginous, and it always becomes harder and more cartilaginous in the course of time, so that in those who have conceived often or who are aged it is excessively hard and cartilaginous. Herophilus

compares its nature (*τὴν φύσιν*) to the upper part of the trachea,[1] and there is a foramen in the cervix through which the female both menstruates and receives the seed of the male, and through which, too, the fœtus issues from the uterus. For it is incredible how the passage varies in width at the proper seasons; this opening at any other time admits the sharpened point of a probe or something slightly thicker, but becomes so well closed when the woman is pregnant that nothing can be admitted. When, however, the fœtus is being released from the wound, the cervix becomes so distended by the labour pains that—a thing which is wonderful even to hear—the entire living being may pass out through the opening. The cervix does not project into the woman's vagina in a straight and direct line in all cases, but it is inclined and deflected sometimes to the right, sometimes to the left, sometimes up, sometimes down; but as regards its anterior and posterior portions, we have already said that it is much the same in all cases.

*Cap. VIII.* deals with the increase and decrease in the thickness of the tunics of the womb, but contains nothing of interest for us.

*Cap. IX.: Testes et Vasa Seminaria Fœminarum.*—The ovaries (*ὄρχεις*, testes) of the female are placed by the sides of the uterus, one being on each side of the fundus (*πυθμήν*) close to the horns. They are of smaller size than the testes of the male, from which they differ both in shape and composition: for the ovaries are flat, whilst the testes are rounded and oblong; and the ovaries appear to be made up of glands, the testes of soft flesh. Each is covered by a separate skin membrane, which in the male is called the dartos. The testes of women do not possess as well a reddish-coloured

[1] Soranus, c. iii.

bag, or scrotum. There are besides arteries and veins running to the ovaries, one to each, branching from those vessels which go to the uterus. These vessels, indeed, intermingle with one another before they enter the ovaries, and they are twisted in coil shape (in the same way as they are in the male), so that if you cut the coil the single cut would display many openings, not because you have cut many vessels, but the one vessel often.

The seminal tubes (*ἀγγεῖα τὰ σπερματικά*) which run from the ovaries are seen to contain seed in a similar way to the tubes in the male; these tubes, which are wide near the ovaries and possess a cavity that can be seen a little distance from the ovaries, become narrowed and appear as though they were not hollow, while at the cornua, where they are joined into the uterus, they again become dilated. Neither Aristotle, Herophilus, nor Euryphon was aware of these connections (*ἐμφύσεις*). "These writers I merely mention in the present instance, not because they alone were ignorant of the fact, but because, though they were excellent dissectors, yet they did not observe this. For it is hardly to be wondered at that Diocles, Praxagoras, Philotimus, and almost all the ancient writers, were ignorant of this fact, as they were of most others in connection with the body, since they had but a rough and imperfect knowledge of dissection; for this reason I think I need not take any notice of them. As regards the first-mentioned, I don't know what to say; I do not dare to condemn them when their investigations in all other matters have been so accurate; at the same time, the seminal vessels are not so small as to escape anyone's notice." These writers, indeed, described in detail those vessels which enter the neck of the bladder, mentioning that they enter the same region as in man, and that these vessels have glands,

and also that they extend from the testes and run close beside the uterus; but of the vessels going to the cornua they said nothing, yet these, indeed, enter the uterus by openings not less evident than those of the vessels entering the neck of the bladder, and they are seen to contain seed in the cavities.

*Cap. X.* deals with the chorion and other matters connected with the fœtus.

# CHAPTER XIII.

## THE BYZANTINE PERIOD.—THE STATE OF MEDICINE AFTER THE DEATH OF GALEN.

We have in a former chapter briefly sketched the state of medical science in the opening years of the Christian era.

We saw the people of Italy, as a scattered and divided race, rise to a proud eminence and become the ruling nation of the East, and under Augustus throw out inducements to intellectual Greece that resulted in the migration of those who firmly established Greek medicine in the Roman capital.

After the death of Augustus (A.D. 14) Rome was governed by a succession of Emperors differing widely in character and mind. One has only to compare the character and deeds of Tiberius,[1] a monster of perfidy; of Caligula, who passed his life in debauchery; of the wanton and cowardly Nero, with the acts and works of Titus, "the love and delight of the human race"; of the soldierly Trajan; of the accomplished Hadrian; of Marcus Aurelius, the patron of science and philosophy, to see under what diverse rulers the people of Rome lived and fought. Now, at one time we see every encouragement given to science and medicine, while at another the mere upholding of harmless philosophical tenets might mean disaster. Caracalla, the parricide and fratricide, when

[1] Theodorus Gadareus said of Tiberius, *πηλὸν ἅιματι πεφυραμένον.*

visiting Alexandria gave the city up to plunder, turned the professors from their seats of learning, and put to death the upholders of the Aristotelian philosophy.

During the first 200 years of this era, Pliny, Celsus, Dioscorides, Soranus, Cælius Aurelianus, Aertæus and Galen lived and wrote; and while the Roman power was at its zenith during the Augustan period, yet slowly and inevitably the power of Rome had begun to decline; and though the works of Galen represent the highest point to which medical science attained in ancient times, yet after his death (A.D. 200) we have a fall so abrupt that we may say, without exaggeration, that the works that we encounter for the next thousand years are but the shadows of those written by Galen and his predecessors, and show in their language, as in their subject-matter, the rapid decline of intellectual vigour and original research.

The overthrow of the Roman State was brought about by the continued profligacy, cruelty and incapacity of the throne; by attacks of foes gradually increasing in strength from without; while within there existed the corruption of officials, the conduct of an overbearing soldiery, the abandonment of family ties, and the increase of vice and crime among all classes. Added to this, the military power at last reigned supreme, and appointed or deposed their Emperors at will. To medical science and art this military power was a fatal opponent.

In tracing the future history of medicine after the death of Galen, we must leave Italy: for though the schools at Rome, as in the case of Alexandria and Athens, still survived the political disasters of the State, Rome itself was doomed to fall into the hands of the barbarians, after it had been abandoned as the capital of the Roman Empire, in favour of the newly-

created Byzantium, where science and learning was destined to lead a sickly existence for a thousand years.

Constantinople was called after its founder Constantine, who, after crossing the Cottian Alps, defeated Maxentius and captured Rome (A.D. 312). This gave him the mastery of the Western world. Licinius, on the other hand, having defeated Galerius, became master of the East. But Constantine, after a considerable interval, determined to oust his rival, and having defeated him (A.D. 323), he now became sole ruler of the empire, and as Rome was but a nominal capital, Constantine determined on making Byzantium the capital of the empire (A.D. 328).

By making Constantinople the residence of the Emperors, the centre of the empire was removed from the Latin world to the Greek; and although Latin continued to be the official language for several centuries, the influence of Greek civilization soon obtained such an ascendancy over the Latin that, while the Roman Empire perished by the barbarians in the West, it was changed into a Greek empire by the Greeks in the East.

Though medicine had now returned to its original cradle, it had never ceased to be cultivated in the minor cities of Greece, as well as in Alexandria, during the Roman supremacy in Italy. But a new influence had now come into life since the seat of learning had been moved from Athens to Rome, and this new power was destined to exert an influence, not altogether favourable, on the advancement of medicine as a science. Christianity had come into being, and, though at first adopted only by the poor, the wretched, and the powerless, it had gradually grown until it numbered in its ranks the rich and powerful, and culminated in having as its chief convert the autocrat of the empire, Constantine. The

Christians, at first persecuted and scorned, in time found themselves in such a position that they were able to turn on those who had oppressed them, and gradually becoming the controllers of all that related to the physical and social welfare of the people, they used their powerful influence to check original research and cramp science in every possible way. The attitude that they assumed at a later period towards the physical science was similar to the position they took up towards medicine during the third and fourth centuries, for the great practical doctrines which were presented to men's minds, and the serious tasks, of the regulation of the will and affections, which religion impressed upon them, made inquiries of mere curiosity seem to be a reprehensible misapplication of human powers; and many of the fathers of the Church revived, in a still more peremptory form, the opinion of Socrates, that the only valuable philosophy is that which teaches us our moral duties and religious hopes.[1]

The Church believed in the preternatural, and was therefore the antagonist to science in all its branches; but though opposed to scientific medicine, it did not disdain to endeavour to create a system of faith-healing, in which miracles, prayers, charms and amulets occupied the foreground. Little wonder is it that men ceased to devote years to the study of a science when they saw themselves successfully supplanted by religious orders who were content to invoke the supernatural to aid them, when the most superficial knowledge of the works of Hippocrates or Galen would have enabled them to work effectual cures.

With the growth of Christianity paganism became extinct, and with it the temples of Asclepius. But the Christians were not content with suppressing the former customs, and

[1] Whewell, "History of the Inductive Sciences," vol. i., p. 252.

now instituted in their place a Christian form of incubation, not dissimilar to the pagan one. Thus, sufferers came to the churches and implored the preservation of their health, or the cure of their infirmities, the fruitfulness of barren women, or the safety and happiness of their children.[1] The priests encouraged the patients to pass the night in the churches, where after dreaming they related their visions, and as in former days gave the priests a clue to the treatment. The fortunate patients donated casts and figures of the diseased parts, and thus a fresh supply of donaria accumulated.

Science stood in direct opposition to Christian dogma when it made the manifestations of Nature, as, for example, the human body—which the Christian held as impure and worthless, if not despicable—the subject-matter of its study.[2] Medicine in all its branches therefore suffered, but no branch more than anatomy, for the Christians forbade human dissection, and even if the student dissected animals he risked being taken for a magician.

Freind, who has studied this period with great diligence, quotes, as an example of the servility of the authors, that he found but one instance of the slightest deviation from the descriptive anatomy of Galen; the exception referred to occurs in the description of the salivary glands.

We have dealt with the gloomy side of the Christians' influence on medicine; the redeeming point is revealed when we consider that to them we owe the establishment of the first hospitals for the sick and the first asylums for the poor and aged.

Whilst traces of establishments for the poor and sick can be found in the history of the Hindus, and the Spaniards found hospitals in Mexico after the discovery of America, and

[1] Gibbon, *op. cit.*, c. xxviii. [2] Puschmann, *op. cit.*, p. 136.

we have seen that at the Iatreia patients were sometimes taken in and cared for, yet the Christian influence was the chief one in the establishment of hospitals, which were supported by contributions from charitable people.

At the close of the fourth century, Fabiola is credited with founding the first Christian infirmary at Rome, and her example was soon followed by others, such as St. Basil, who established a large charity at Cæsarea, while at Edessa Bishop Rabboula built a hospital which was exclusively for women.

Foundling hospitals came into existence first at Treves, then at Angers and Milan.

* * * * *

The impetus to original research having been checked, the authors we are now about to deal with are to be looked on as mere compilers. As Heeren[1] has observed, compilation after the encyclopædic method is the usual concomitant of declining literature, and our three authors, Oribasius, Aetius, and Paulus Ægineta, illustrate well this rule: they have copied what was valuable, but they have given us little that was original. On the other hand, we cannot but admire the industry of those patient writers when we consider the immense labour involved in their compilations. Oribasius (A.D. 360) at the instance of Julian compiled his work, which consisted originally of seventy-two volumes. If we glance for a moment at the method of composing and making a book in those remote days, we shall perhaps better appreciate the enormous labour involved in these mere compilations.

The skin of the goat or calf tanned soft, and dyed yellow or red, was a favourite material for writing on among ancient

[1] Hallam, "Introduction to the Literature of Europe," c. i.

authors.[1] These skins were often joined one to another until they reached 100 feet in length; this constituted a roll or *volume*. Parchment, so called from first being made at Pergamus, was in great demand, but was costly. The papyrus formed the chief article on which to write, but we frequently find interleaved with every four sheets of the papyrus a sheet of parchment, so as to give the whole stability. Probably for clinical purposes the tablets of wax written on by a style, or the leaves of trees, may have been used, and the writer then copied his notes on to some more convenient material for preservation; while in special cases the priest, the physician, or the patient had the history carved on stones and placed in the temple. These records, we have seen, were used by Hippocrates in compiling some of his works; our three authors, however, probably made but slight use of them.

Beside stone tablets, wooden tables were engraved with important matters, such as laws, and were termed *codices*.

The inner bark of the linden or teil-tree was much in demand; it was the *liber* of the Romans, and the *Biblos* of the Greeks.

The instruments used in writing varied with the material chosen by the author for his manuscript. For waxen or leaden tablets a needle, called the style, was employed; this was often made of iron. For writing with ink a calamus, formed from a reed of the Nile, was much in use; the calamus was sometimes, however, made of silver. The quill also was used in very ancient times.

The ink was made either from the dark fluid obtained from the cuttle-fish, or else made from the finest soots, or the coal

[1] Isaac Taylor, "History of the Transmission of Ancient Books to Modern Times." London, 1859.

of ivory or wood, mixed with gum and diluted with acids; these inks often kept their pristine blackness for centuries after. The titles of the chapters were sometimes written in coloured inks.

After writing several sheets, authors folded three or four together and had them stitched separately, and then connected them with similar sheets already stitched; when sufficient were connected the whole was covered by linen, silk, or leather.

The above will serve to show what a formidable task an author had before him in ancient times when he sat down to write a book; let the reader consider what Galen's task was, of whom it is stated that the "number of his distinct treatises cannot have been less than 500."[1] Most difficult and expensive must it have been to have acquired a sufficient number of books to have entitled one to have been considered the owner of a library, yet such was the wonderful avidity of the Greeks for learning and advancement, that a book, having once been pronounced worthy of study, was rapidly copied and recopied, until there were sufficient copies to be sent even to the furthest Greek colonies.

The accumulation of books to form public libraries often occupied the minds of potentates, and it is related of one of the Ptolemies that he refused to supply the famished Athenians with wheat until they had presented him with the original manuscripts of Æschylus, Sophocles, and Euripides. This demand for celebrated authors led to forgeries, and this accounts for the large number of spurious works that have been handed down to us as having been written by Hippocrates and Galen.

Pisistratus was one of the first to collect the works of the

[1] Greenhill: "Galen" (Smith's "Dictionary of Mythology").

learned, whilst among the cherished spoils of war the books found in the libraries of the conquered cities were often most carefully removed and sent back to the capital. Thus, Sylla brought from Athens the famous library of Apellicon, in which were the works of Aristotle and Theophrastus, that were hardly known before in Italy.[1]

Among the libraries that have been famous we may recall those of Crassus, Cæsar, Cicero,[2] and Lucullus; the Alexandrian, founded by Ptolemy, contained 700,000 books, and the library of Attalus, King of Pergamus, had 200,000; lastly, the library founded at Constantinople by Constantine continued to be added to for a thousand years, until the fall of that city, 1453.[3] It is not improbable that it was in this latter library that Oribasius and Aetius compiled their works, though, as they both had studied at Alexandria, they may have returned to that city to consult in its archives copies of works not to be seen elsewhere.

[1] Plutarch, "Life of Sylla."

[2] Cicero purchased many of his works from Atticus, who had a family of learned slaves, and these he employed to copy from the manuscripts of the various libraries in Athens. In one of Cicero's works we find the following letter to Atticus: "Take care that you do not part with your library to any man, how eager soever he may be to buy it, for I am setting apart all my little rents to purchase that relief for my old age" (Middleton, "Life of Cicero," vol. i., p. 152).

[3] In the library at Cairo the manuscripts of astronomy and medicine amounted to 6,500 (Gibbon, *op. cit.*, c. lii.).

# CHAPTER XIV.

## ORIBASIUS.

Oribasius (Ὀρειβάσιος, or Ὀριβάσιος) was born at Pergamus, the birthplace of Galen, about 325 A.D. He was well educated, and studied under Zeno. Having become acquainted with Julian whilst that Prince was kept in confinement in Asia Minor, a lifelong friendship sprang up between them, only to end with the death of the Emperor. Our author, having thrown in his lot with Julian after he was raised to the rank of Cæsar, accompanied his patron into Gaul. During this expedition Julian commanded him to make an epitome of the writings of Galen, and Oribasius executed the task so well that Julian requested him to make the work more complete, by adding from other authors what was already wanting in his first essay. This work Oribasius accomplished after Julian became Emperor (A.D. 361), and so vast was the undertaking that the results were contained in seventy books, under the title of *συναγωγαὶ ἰατρικάι*, or "Collecta Medicinalia."

Eunapius, the intimate friend of Oribasius, has written his life, and we find, from that work, that after Julian had been appointed Emperor he created Oribasius Quæstor of Constantinople.

After the death of his patron, Oribasius was exiled by Julian's successors, Valentinian and Valens, to some nation

among the "barbarians." Here our author showed his knowledge of medicine to great advantage, and in time was held in high esteem among his new patients; and after a period he married a woman of good family with ample fortune, by whom he had four children; and it was to one of these, his son Eustathius, that he addressed his "Synopsis" (Σύνοψις), which is an abridgment of his first great compilation. The date of our author's death is unknown, but it is conjectured that it was at the beginning of the fifth century, since he was still alive in 395 A.D., when Eunapius inserted the account of his life in his "Vitæ Philosophorum et Sophistarum."

We shall now proceed to notice the three works that Oribasius has left us.

The first and most important is the "Collecta Medicinalia." This is not an original work, but a compilation, and one that mainly aims at giving an epitome of Galen's works, together with extracts from other authors, the resulting work being a vast encyclopædia, after the style of Pliny's compilation, and embraces medicine, hygiene, therapeutics, and surgery.

The plan followed by Oribasius was not merely to take a chapter in its entirety from the author that he was dealing with, but, rather, to cut out a passage from one part and another from another, and then piece them together with extracts from Galen, Hippocrates, Soranus, Rufus and Antyllus. But frequently he is not content with a piecemeal chapter formed on the above lines, so he abstracts a section on the subject from some other author, whose views are frequently at complete variance with the opinions expressed in the other chapter. This method is a gain to us, but it must have been very disconcerting to those who consulted our author's works in his own time.

His second work, the "Synopsis," was written for his son Eustathius, and was probably composed some thirty years after the first. It consists of nine books, and is a compendium of the "Collecta," and was intended to serve as a vade-mecum for those who could not consult more detailed works. The author also tells us, in the preface, that he does not make mention of such subjects as surgery, anatomy, machines, luxations, and fractures, because these are all difficult to deal with, and are outside the scope of this vade-mecum, which is meant to be a merely elementary treatise on hygiene and therapeutics.

In this work he uses his predecessors' views, taking Galen still as his chief authority; but on the whole he is more concise, and less confusing, than in the "Collecta"; as he is content to give one view of the subject, and not several at variance with one another.

His third work is entitled Εὐπόριστα, or "De Facile Parabilibus." While the former works were written for medical men, this last work was compiled for those who had not specially studied medicine, and who perchance might wish to consult a medical work in an emergency.

This work is dedicated to Eunapius, his friend and biographer, and was probably written between 390 and 400 A.D. It is chiefly made up of extracts from the "Synopsis," and also in a less degree from the "Collecta."

It is divided into four books, and it gives the directions for the first aid to those who are sick, and who may be far from any medical man. It describes also the symptoms of the various diseases, enumerates the principal medicinal remedies applicable to each case, gives lists of remedies used in medicine, and also indicates their effects. On the whole it is a clear little manual, and often to the point.

The works of Oribasius are of great importance, not from their originality, but because they have preserved extracts from authors whose works have perished for ever. But this is not their only recommendation; they have, by preserving so many extracts from such an author as Galen, become in themselves a reference for the text of this writer, as well as for others whose works we have only in a mutilated condition. Lastly, these works are of great importance, inasmuch as they throw a side-light on such subjects as the baths, epidemic diseases, the treatment of fevers, etc.—subjects not treated so fully by any other author of antiquity whose works we possess.

Of the various editions of Oribasius that have been published we shall take notice of one only—the last, and at the same time the best and most complete.

This edition was published between 1851 and 1876, in six volumes, at Paris, under the following circumstances: Daremberg, the well-known author on ancient medicine, conceived the idea of examining the manuscripts of the best-known Greek and Latin authors in the various European libraries, and, after collating the various texts, publishing a complete edition of each author. This stupendous task was begun, and in part carried out, under the patronage of the French Government, and one of the results of his labours was this edition of the works of Oribasius.[1] His coadjutor in this task was Bussemaker of Amsterdam.

This edition of Oribasius consists of six volumes, each containing some 800 pages.

The first four volumes were published under the joint supervision of the authors; but neither lived to see the

[1] "Œuvres d'Oribasius, texte grec, en grande parti nédit," etc. Bussemaker et Baremberg. Paris, 1851-1876.

fifth and sixth volumes brought out; that task was left to Molinier, who used his predecessors' notes to complete their work.

* * * * *

We propose now to examine the works of Oribasius, and to pick out any passages that refer to the diseases of women.

In these volumes Daremberg and Bussemaker have gone to infinite trouble to show from what source almost every passage in our author's writings has been derived; and these lists prove beyond all doubt that Oribasius has nothing original to say on the subject of gynæcology.

Taking the first volume, we find that it contains the first six books, and deals with Dietetics and Exercise, and under the latter heading we have massage dealt with at great length.

The second volume contains Books VII. to X., XIV., XV. and a fragment of XVI. It deals with such subjects as bleeding, purging, the use of the enema, hygiene, baths, fumigation, pessaries, vaginal injections, and the administration of medicine. From these subjects we cull the following:

B. VIII. xxiv.: Rectal injections of milk are recommended in cases of inflammation of the bladder or of the uterus.

B. VIII. xxxi.: The uterus has a certain affinity in suffering with the colon; it is natural, therefore, to suppose that, in case of inflammation of the uterus, injections into the colon will have a soothing effect. Oil and a decoction of linseed-meal are recommended for such injections.

B. VIII. xxxvii., xxxviii.: In these chapters is given an interesting account of the position to be occupied by a patient during the administration of an enema. The various causes that prevent the fluid from being successfully injected are dealt with.

B. IX. xxiv.-lv. : These chapters deal with cataplasms, and in several places such applications are mentioned as being useful in gynæcological cases.

B. X. i.-viii. : These chapters deal with the use of baths, and our author quotes Antyllus as his authority for recommending mineral springs for women who are irregular at the periods, and for those who are subject to abortions (c. iii.).

B. X. xix. : Fumigation of the genital organs is described. The chapter is extracted from Antyllus, who recommends fumigation for prolapse of the uterus. After mentioning the various substances to be placed in the vessel he says : "A cover of wood, pierced in the centre, is placed on the vessel, where it is fixed by means of potter's clay, or by a paste of flour. Into the opening in the lid a pipe is fixed, very exactly, so that no air can enter the vessel. To the extremity of the pipe (that is, projecting from the vessel) a small tube of lead is carefully fixed. The woman is placed on an accouchement chair (*ἐπὶ δίφρου μαιωτικοῦ*), which has an opening in the centre. Under the chair a small flame is placed, and over this flame the fumigating vessel is adjusted, and the pipe is introduced into the hole in the chair, after which the leaden pipe, which reaches beyond the opening in the chair, is passed by the patient into her vaginal orifice. The vessel being heated, the fumes pass up the pipes and fumigate the parts.

B. X. xxii. : A few observations are recorded here on the action of astringents on the uterus.

B. X. xxv. : On Pessaries—from Antyllus. This chapter has been extracted by Paul, and we shall give it in reviewing that writer's works.

B. X. xxvi. : On Injections—from Antyllus. Instruments are specially formed for uterine injections, but into the cavity

that is situated anterior to the uterus (vagina) one may make injections by means of a small bladder (*φυσαρίον*); the substances that are injected into the uterus and vagina are, however, the same.

An injection may soften, restrain, cool, heat, expel gas, and ease pain, all these effects depending on the ingredients used.

B. XIV. lxiii.: This chapter contains some remarks from Galen on the means to be employed for increasing the flow of milk, or for increasing the menstrual flow. The view is held that the same substances that will excite the secretion of milk will also increase the periods, since the blood contained in the veins is the source common to both. The author observes that there are veins which are common to both the breasts and the uterus, and that if the blood is carried more to one of the parts than to the other, the part deprived of the blood becomes, for the time, devoid of secretion.

B. XIV. lxv.: Many receipts are given here for pessaries, which are intended to provoke the menstrual flow.

Vol. III. contains part of Book XXI., which deals with physiology and pathology; part of Book XXII., which deals with the physiology of generation; extracts from other books whose proper numbering is doubtful, and which deal with hygiene; Books XXIV., XXV., and XLV.

B. XXIV. is of great interest to us, for it contains the well-known chapter from Soranus on the anatomy of the uterus, and it was by means of this chapter that Dietz recognised the long-lost work of Soranus that we have already noticed.

B. XXII. ii.: Here is given Galen's account of the sperm. The following passage is of interest, as it exhibits the fact that Galen understood the functions of the Fallopian tubes, and it is also an example of what we have referred to above—*i.e.*, that Oribasius gives in one chapter the views of one author on

a subject, and in the next chapter gives views entirely at variance with these. In short, Galen here points out that the Fallopian tubes convey the sperm from the ovaries to the uterus, while Soranus did not even recognise the tubes, and supposed that the ovaries discharged their products into the bladder. The extract is as follows: "The epididymes of females are not manifest, because the testicles (ovaries) and the sperm vessels (tubes) are equally small; indeed, the testicles, which are much smaller than in the male, are situated in the (lower region of the) abdomen by the side of the fundus of the uterus, one on each side, and they receive twisted vessels similar to those that exist in the male. . . . The female ejaculates her sperm into the uterus, and it is warm but less abundant than in the male. In consequence the vessel that takes its rise in the testicle implants itself in the horn of the uterus, and is full of sperm, and pours through the horns of the uterus, by means of a narrow orifice, a similar fluid into the cavity of the uterus."

The above quotation, while showing that Galen had hit upon the function of the Fallopian tubes, at the same time shows that he did not, of course, recognise that the "ovum" was the body that was transmitted, but mistook the normal secretion[1] (?) of the tube for the sperm of the female, and imagined that this had been secreted by the ovaries.

B. XXII. vi.: Concerning the Mole. In this chapter Oribasius gives an account of what he terms the mole. He says that after conception the size of the uterus increases, and that the woman appears to be pregnant. But when the time of delivery comes there is no labour; still, the size (of the belly) does not diminish, but it remains in the distended con-

[1] The probable function of the Fallopian glands is to provide an albuminous fluid for the ovum as it traverses the Fallopian tube (Bland Sutton, "Diseases of Ovaries and Fallopian Tubes," p. 234).

dition for a space of from three to four years, until the patient is seized with diarrhœa, and she is delivered of a mass of flesh, which is called a mole. In some cases the above condition remains until the patient is advanced in years, and may even persist up to the time of her death. Later on in this chapter Oribasius remarks that the mole in some cases may become so hard that we cannot cut it with an axe.

In a note[1] to the above passage, Daremberg and Bussemaker say: "En lisant ce chapitre, ainsi que les endroits parallèles de Soranus, d'Aetius et d'Actuarius, que nous avons cités dans la 'Table des chapitres,' on se convaincre facilement que, sous le nom de môle, les anciens décrivent, non l'affection qui porte encore ce nom, mais la grossesse extra-utérine."

We do not agree with this opinion; a careful study of the descriptions of the mole in Soranus, Aetius, and Paul convinces us that the ancients referred to two separate conditions, viz., myoma of the uterus and the fleshy mole, as we understand the term nowadays. In our opinion, the above description will apply to a fibroid of the uterus, the hard body, which Daremberg would consider a lithopædion, being in our opinion a calculus of the uterus, due to the degeneration of the fibroid, a condition referred to both by Hippocrates and Aetius. Adams, in his commentary on Paul's description of the mole, considers that Paul is dealing with a fibroid.

B. XXII. iii.: Concerning the Fœtus of Seven Months, from Galen. After making some lengthy remarks on the cervix uteri, the writer says that hardness of the cervix is a symptom of three different conditions: dryness, inflammation, and scirrhus of the womb. Later on in the chapter he supports

[1] Vol. III., p. 692.

the idea that the male child is carried on the right side, and the female child on the left side, of the uterus.

The régime for woman is dealt with in an elaborate manner in chapters iv. and v. in the collection of chapters from books whose numbers are uncertain.

B. XXIV. deals with anatomy, and c. xxix. deals with the uterus, the chapter being composed of extracts from Galen's work on the dissection of the uterus.

B. XXIV. xxxi., xxxii.: These chapters also deal with the anatomy of the uterus and vulva, and are there alluded to as having been extracted from Soranus.

The fourth volume contains Book XLV., which deals with tumours; Books XLVI., XLVII., XLVIII., XLIX., which deal with fractures and dislocations; Book L., on affections of the genitals; Book LI., on ulcers; finally there is a collection of chapters from books whose numbers are not ascertained.

B. XLV. xii.: On the Thymus. The thymus (*θύμος*) is an ulcer covered by tissue that is rugged and friable. It often occurs about the seat and about the genital parts, as well as at other parts of the body. It may be benign or malignant, and when malignant, if it be cut out, it will return, so that it is necessary in operating on it to have resource to the cautery, and even then it may be incurable. Thymus that takes the form of carcinoma is grave. Sometimes in its growth the genital organs of the female are invaded, the invasion taking place from the thymus growing at the seat.

In B. L., c. viii., the same disease is described as affecting the male organs of generation.

Among the books whose numbers are not definitely ascertained we have a few chapters dealing with gynæcological subjects.

C. cxxxviii.: Menstrual Purgation. This chapter gives some details about the time of the first onset of the menses, and when they usually cease. Sitz-baths are mentioned in the treatment of dysmenorrhœa, and myrrh is recommended for amenorrhœa.

C. cxxxix.: Remedies which expel the Fœtus. The author states that the same pessaries that are used to provoke the periods also expel the fœtus.

C. cxl.: On Pica.

C. cxli.: On Deliverance. This chapter deals with retention of the placenta, and directions are given for extracting it with the hand introduced into the uterus.

C. cxlii.: Retention of the Menses. Directions are given for the treatment of amenorrhœa by pessaries, baths, and medicines.

C. cxliii.: On Menorrhagia. This chapter is the only attempt at anything like systematic treatment of a gynæcological subject that occurs in the "Collecta."

The author opens the chapter by stating the circumstances under which we get an increased loss of blood. His treatment for menorrhagia consists in bandaging the limbs, the application of affusions to the genital parts by means of cloths or of warm sponges; he warns, as does Aetius, against chilling the parts. He recommends the application, to the uterus, of the cinders of a new sponge that has been soaked in tar, also pessaries of wool in the form of a ball or made in the shape of a finger. Injections by means of a small syringe or of an instrument specially designed for that object should be tried. Lastly, a small strip of lint may be applied to the mouth of the womb by means of a sound, or a sponge shaped like a tent may be used.

C. cxliv.: The flux is considered, and general treatment by exercise, massage, and baths is recommended.

C. cxlv.: Inflammation and Deviation of the Uterus. This chapter deals with inflammation of the womb, the portion concerning deviation being lost. The subject is treated in a way similar to that found in Aetius.

Vol. V. contains the "Synopsis" and "Euphorista."

"Synopsis," B. VIII., c. xli.: Remedies against the Diseases of Women. This chapter deals with uterine suffocation. Rue mixed with honey, and applied by means of wool to the rectum, is one remedy. We mention it in order to show that the pessary of wool was used both for the front and the back passage.

C. xlii.: Excessive Uterine Purgation. This is a condensation of the chapter in the "Collecta" (Vol. IV., c. cxliii.).

C. xliii.: Treatment of Sterile Women. The general and the local treatment of these cases is considered. Massage, fumigation, fomentations, the douche, and pessaries, are all recommended, the last-named being of use when the mouth of the womb is gaping or when it is too contracted.

C. xlv.: Uterine Suffocation, from Philumenus.

Cc. xlvi., xlvii.: Flux.

C. xlviii.: Inflammation of the Uterus. A short chapter on treatment.

C. xlix.: Abscess of the Uterus. A few lines, the last sentence being that it is necessary to know that an abscess of the uterus may rupture at the orifice of the womb, into the bladder, but more often into the rectum.

C. l.: Ulcer of the Uterus. The treatment alone is dealt with, sitz-baths, embrocations, cataplasms, and pessaries being recommended.

C. li.: Carcinoma of the Uterus. The author remarks that

the affection is incurable, but that we should alleviate the pains by means of opium pessaries.

C. lii.: Fissures of the Womb. Pessaries and sitz-baths are to be used in the treatment of these.

C. liii.: Shrinking (of the Neck) of the Uterus. The orifice of the womb may be the seat of a process of shrinking, following on an ulcer of the anterior portion, or of an inflammation which ends in scirrhus. Sitz-baths, vapour-baths, and fumigations are the treatment.

C. liv.: On the Uterus filled with Gas.

C. lv.: Prolapse of the Uterus. A short description is given of the method of restoring the prolapsed uterus by placing the patient on her back, elevating the pelvis, pressing the uterus upwards, and then placing in the vagina a ball of wool with a string attached to it. Sponges are applied to the pubes, and cupping-glasses to the region of the umbilicus.

"Euphorista," B. IV., c. cxii.: How to provoke the Menses.

C. cxiii.: Flux.

C. cxiv.: Remedies against Inflammation, Ulceration, and Pruritus of the Vulva and Vagina, and against Prolapse of the Uterus. This chapter contains a few receipts for the various affections enumerated.

It will be seen from the above review that the works of Oribasius contain few facts of any importance on the subject of gynæcology, the books dealing with this subject and obstetrics being probably, as Siebold suggests, among those that we have lost.

## CHAPTER XV.

### MOSCHION.

It is customary to associate the name of Moschion with that of Soranus, not because these writers were contemporaries—in reality some centuries separated them—but because the irony of fate has shown that Moschion, an author who was lauded and studied while Soranus lay forgotten and lost, is but the abbreviator and translator of the earlier Soranus. The true relation of Moschion's work to that of Soranus has been only clearly understood during recent years, and it is interesting to follow out the history of the various editions of the minor work until we come to the time when, Soranus being disentombed, his copier is deposed. Among those who have published editions of Moschion, or who have written concerning him, may be mentioned the following: Gesner, Wolf, Bauhien, Spach, Dewez, Siebold, Haeser, Ermerins, Wagner, Daremberg, Rose, Herrgott, Barbour. Of these writers, Herrgott in his notes to Siebold's work, and in his own edition of Soranus and Moschion, and Dewez in the preface to his edition of Moschion, give us an outline of the steps that led to the ultimate elucidation of the matter.

Towards the middle of the sixteenth century Gesner of Zurich found a Greek manuscript in the library of Augsburg. He copied it, and compared it with a Latin translation of the

same author in the possession of Guarinus. Wolf, his friend and successor, published the work after Gesner's death, adding to it the much-mutilated preface of Moschion found in the Latin version of Guarinus, but not in the Greek one. This preface, strange to say, did not contain any mention of Soranus, and so the original author from whom the work had been copied was not surmised. This work, with another dealing with diseases of women, comprised a portion of the gynæcological encyclopædia published by Gaspard Wolf at Basle in 1566, under the title of "Gynæciorum, libri græcorum, arabrum et latinorum." This collection, augmented by Bauhien in 1586, and again by Spach in 1597, was published respectively at Basle and Strasburg.

No new discovery was made with regard to Moschion, and it was not until 1793 that Dewez published his edition from a Greek manuscript preserved in the library at Vienna. His edition is before us now. It opens with a lengthy preface in Latin, and this is followed by the Greek text of the manuscript, and then is given Dewez's version of the text in Latin, the whole concluding with copious notes and the spurious chapters that Dewez objects to in the edition of Gesner.

In the preface Dewez points out the difficulties that Gesner had to overcome on account of the mutilated condition of the manuscript, and he then passes on to examine the statement made by Le Clerc, who tried to prove that Moschion was a contemporary of the Emperor Nero, because Moschion states in one of his works that he had given a medicated pessary to Julia Agrippina, who soon after this treatment was enabled to become pregnant, and brought forth a son, Diogenianus: "Misi autem Dominæ Juliæ Agrippinæ illius (Pessi) usum, quæ hucusque sterilis desideratissimum filium Diogenianum habet." The objection to this theory is that Julia Agrippina's

son was first called L. Domitius Ahenobarbus, and then, after Agrippina's marriage with her uncle Claudius, her son was called Nero Claudius Cæsar Drusus Germanicus: we have no authority for the statement that Nero was ever called Diogenianus, and therefore Le Clerc's theory throws no light on the subject; on the contrary, as Dewez remarks, if Moschion had lived in the days of Nero, how could he quote Soranus, who lived in the time of Trajan and Hadrian? Now, it is to be noticed that the quotation containing the name Soranus, referred to by Dewez, occurs not in the preface of any manuscript that Dewez had, but in the penultimate chapter of the work: "Et hæ quidem sunt causæ difficilis partus, quas ego Moschion et cætera antiquitas statuere decrevimus, Soranus vero alias adjicit causas." Dewez later on says: "Moschion, as is shown in the preface to my manuscript, wrote the book for the use of Latin matrons and midwives who were ignorant of Greek idioms; hence he wrote it in Latin, and not in Greek. It is not unlikely that the Latin work perished, and that the Greek rendering, which was written at a much later date, alone remained. Thus, the Greek work is a recent one, but still one of antiquity, and may date from about the time of Cælius Aurelianus.

The next step in the elucidation was the discovery of the work of Soranus by Dietz, and its subsequent publication by Lobeck in 1838, and by Ermerins in 1869. These works allowed a comparison to be made between Soranus and Moschion, and the final judgment was pronounced when in 1882 Rose, at Leipsic, published his work, from a manuscript work of the thirteenth century, under the title of "Sorani Gynæciorum vetus translatio latina nunc primum edita cum additis græci textus reliquiis a Dietzio repertis atque ad ipsum codicem parisiensem nunc recognitis."

Rose had several manuscripts to help him, and he had not only the preface that Dewez possessed, but a still more perfect one in which the following significant sentence occurred: "Placuit mihi hæc quoque gynæcia in latinum vertere sermonem, licet etiam maximam partem triacontados ad integrum tenorem secutus Soranum transtulerim."

Rose by ample reference indicates where each chapter in Moschion's work had been taken from Soranus.

After Rose, Herrgott in 1895 published his edition of Soranus in French, dovetailing each chapter of Moschion with the chapter in Soranus from which it had been derived.

Thus, after centuries we find Moschion falling from his high place as an original author, and taking up the lowly rank of translator and abbreviator of another man's work.

Barbour, in a short account of our author's work, gives his views in the following extract: "It will be evident that this work of Moschion is based on the teaching of Soranus, though when Moschion lived and what the exact relation of the two books to each other is lies wrapped in obscurity.

"Moschion admits in his preface that his book is not an original, but a translation from a Greek text for the use of 'Latin matrons and obstetricians unskilled in the Greek tongue.' This original Latin Moschion is lost. The Greek version, which we have in the College of Physicians' Library (Edinburgh), is considered by Weber (quoted by Ermerins) to have been produced in the sixth century at Constantinople; and the extant Latin version is, according to the same authority, a still more recent production of the Greek one.[1] Further, it is held by Weber and Ermerins that even the

[1] "My (Weber's) own opinion is that the Latin fœtus was a product of the Schola Salernitana, to which we owe many translations of that kind."—BARBOUR.

original Moschion is not based directly on Soranus, but on a work on diseases of women written in the fourth century by Cælius Aurelianus, who in his turn drew from Soranus.[1] If this view is correct, we must place Moschion somewhere during the fourth century, or between it and the sixth. These various editions of Moschion show that the book was widely used, and hence that the valuable work of Soranus on gynæcology and obstetrics was during these centuries not altogether lost. . . .

"It is interesting to follow the history of this book through its various stages in the light of these different editions, and we would suggest that the first Latin version, for the use of Latin-speaking matrons and midwives, was produced before the fall of the Western Empire in the fifth century; its Greek sister just fits in with the development of the Eastern or Greek-speaking Empire at Constantinople in the sixth century; and the version in barbarous Latin points to a later period, when learning was beginning to make way again in Western Europe."[2]

With regard to Moschion's name, it may originally have been Mose, and this would have been pronounced Mosche; the Greek form would then become *Μοσχίων*, and the Latin Muscio.

Finally, it is to be noted that the name Moschion occurs in the works of Pliny, Soranus, Galen, Aetius and other authors,

[1] "Moschion sua non ex ipso Sorano hausisse videtur, sed ex alio eoque Latino scriptore, qui Sorani sane scripto usus librum de mulierum morbis composuit. Is fortasse erat Cælius Aurelianus, medicus seculi, ut videtur, quarti post Christum, qui muliebrium passionum libros scripsit. Soranum sæpius commemorat eiusque libros, ut constat, in Latinum transtulit; scholæ methodicæ addictus est et multa habet, quæ cum Moschione concordent."—ERMERINS, *Soranus*, p. xvii.

Ermerins, in a note to the above quotation from Weber, says: "Probabilis tamen mihi est Weberi conjectura Moschionem e Cælii Latinis Græca sua in brevius redegisse" (McKay).

[2] Barbour, *Edinburgh Medical Journal*, vol. xxxiv., p. 331.

all of whom lived prior to the date at which our author is supposed to have flourished, *i.e.*, the fifth or sixth century A.D.

* * * * *

We shall now proceed to briefly notice this small work of Moschion.

The book is in the form of a catechism with 152 questions and answers, and it was, to the Roman midwives, what Saunders' Question-Compends are to the American student of the present day. The first question asked is, "Quid est obstetrix?" then follows a short description explaining the author's view. The second question is, "By how many names is the uterus called?" Then the author replies that the uterus is called by three different names, and explains the origin of these various terms.

In order to show how absolutely certain it is that Moschion took his materials either directly from Soranus or at second hand from Cælius Aurelianus, whose works have been shown to be little more than Latin translations from Soranus, we shall give a chapter from Soranus, and after that the corresponding chapter from Moschion.

### Soranus.

*Cap. XX.:* What are the signs by which an approaching normal labour may be recognised?

In order that the necessary preparations may be made for the accouchement, it is indispensable to know the premonitory signs of a labour occurring at the seventh month or the tenth month. The signs are as follows: A feeling of weight in the lower region of the abdomen and in the hypogastric region, together with the sensation of heat in the genital parts, the groin, and the loins, with niggling pains in the lower segment of the uterus. The uterus descends so much into the vagina

that the exploring finger of the midwife reaches it without difficulty. The uterine orifice is soft and swollen, open and moist, and in proportion to the progress of the labour the region about the haunches and the epigastrium becomes less prominent; but, on the other hand, the loins and the pubic region become swollen, and the patient passes her water frequently. A viscous secretion is discharged from the genital parts, sometimes tinged with blood, which is derived from the vessels of the chorion which have ruptured. Should a vaginal examination be made, the exploring finger will encounter a rounded tumour, which resembles an egg; one distinguishes this from a case of inflammation, in which the examination is followed by pain, and the orifice is tender and dry.

### Moschion.

*Cap. XLIV.:* What are the signs of approaching labour?

At the seventh month and tenth month a pregnant woman has pain and a sense of heat, not only in the region of her kidneys, but also in her inguinal and lumbar regions. The uterus comes to be lower in its position; its orifice becomes opened and the parts moist. On the approach of the labour the upper regions of the abdomen become less full, while the lower parts become fuller above the groins. There is frequent micturition, and the exploring finger introduced into the vagina feels a body similar to an egg, in the orifice of the uterus, and this body grows gradually larger, and at times there is a show of blood.

*Cap. XLV.:* How are the pains that accompany inflammation to be distinguished from those of labour?

With the pains which accompany inflammation, the uterine orifice is closed and dry.

On p. 4 of Dewez's edition of Moschion is a picture of the uterus. Had this drawing been a part of the original manuscript, it would certainly have been the oldest representation of the uterus that we possess. It, however, has no great antiquity, and, as Haeser and Barbour have pointed out, it is an interpolation from Vesalius (1514 to 1564).

# CHAPTER XVI.

## AETIUS.

Aetius (Ἀέτιος) was born at Amida, a city of Mesopotamia. The exact time at which he lived has not been determined. Cornarius in his edition of some of the books of Aetius, published in 1533, confused our author with Aetius the Atheist, known generally as Aetius Antiocheni, who was born about A.D. 300. Our author quotes St. Cyril, Patriarch of Alexandria, who died A.D. 444, in the following words: "Posca concoctione valde commoda, Cyrilli Archiepiscopi" (Tetrab. III. i. xxiv.). He also quotes Petrus Archiater: "Aliud quod preparat Petrus Archiathros, et ipsi bonum testimonium præbet" (Tetrab. II. i. x.), an author who lived in the middle of the sixth century. On the other hand, Aetius is quoted by Alexander Trallianus (526 to 605); so that we may fix his period as the middle of the sixth century, as Haeser has done. Castelanus, however, who wrote in 1618, placed him after Paul: "Galenum contractum, Oribasium explicatum, Paulum ampliatum." This, however, is an error.

From passages in his works we know that he studied at Alexandria: "ἐλάιου σκευασία ὁ εσκεύασα (*paravi*) ἐν Ἀλεξανδρεία"; and it is not improbable that it was at Alexandria, with all its wealth of books, that he made some of his compilations.

Of his life we know little. He resided at Constantinople, and gained the title of "Comes obsequii," or chief officer in attendance on the Emperor, probably Justinian I. (527 to 565); this title appears on several of the manuscripts of his works. He was the first writer to mention such Eastern drugs as cloves and camphor, and he was the first important Christian Greek author on medicine, whose works we possess, who has left us examples of the spells and charms in use in his day. Thus, of a patient who has a bone in his throat, he says that the bone may be extracted by forceps, or a piece of raw meat with a string on it may be given to him, and he is directed to swallow it, and then immediately it is to be drawn up again; or the following may be said: "Egredere os, si tamen os, aut festuca, aut quicquid tandem existit: Quemadmodum Jesus Christus ex sepulchro Lazarum eduxit, et quemadmodum Ionum ex ceto;" then the patient was taken by the throat, and the following said: "Blasius martyr et servus Christi dicit, aut ascende aut descende."

The work that Aetius has left us is entitled "*βιβλία Ἰατρικὰ ἑκκαίδεκα*," and deals with medicine and surgery in sixteen books. It is a valuable work, not because of any great originality about it, for it is a mere compilation, the author using his own experience to guide him when accepting another's statement; but it is valuable, nevertheless, because it represents the state of medicine at the time at which he wrote, a time when original work had ceased, and each author was content to slavishly copy from his predecessors; and it is valuable because it has preserved to us passages from authors such as Philumenus, Leonides, and Aspasia, whose works we do not possess. With regard to gynæcology and obstetrics the writings are of the greatest interest, and give us in several places a better view of the

advanced state of these sciences than can be obtained from other authors.

The only work of Aetius that we now possess is divided up into four Tetrabibli, each of which is again divided into four sermones (λόγοι). This arrangement is the work of some modern editor, for Aetius himself refers to his own works according to the numerical series.

The book that is devoted to gynæcology and obstetrics is the last, or sixteenth, of the series, and we shall presently proceed to examine its contents.

Of the various editions of Aetius that have been published, the Aldine, brought out at Venice in 1534, consisted of the first eight books in Greek. It is to be regretted that the remaining eight books, with one exception, have not been published in that language, for it is only by consulting the original version of our author that we can hope to clear up many of the passages which at present the Latin versions leave in obscurity. Daremberg in his edition of Rufus (1879) published the full Greek text of the eleventh book, which deals with diseases of the kidney and bladder.

In 1533 Janus Cornarius published six of the books in Latin, *i.e.*, from the eighth to the thirteenth inclusive; while Montanus completed the work by publishing the remaining ten books in 1535 at Basle. Justus published a complete Latin translation in 1834 at Venice; while in 1542 Cornarius published a Latin translation of the whole work, which has gone through several editions, the last probably being that in Stephen's "Medicæ Artis Principes," Paris, 1567. The edition before us is that of Cornarius, 1549.

Besides these editions of our author, various chapters have been published from his works from time to time. Among the writers in this connection we shall but mention Orosius

(1540), Horn (1654), Habenstreit (1757), Weigel (1791), Magnus Tengström (1817), Mustoxydes and Schinas (1816). Daremberg, as we have already mentioned, has published the eleventh book in Greek, in order to show how much Aetius was dependent on Rufus for his facts for that particular book.

Maughs[1] has given several extracts from the sixteenth book in an article published in an American journal. As there has been no edition of the books of Aetius since 1567, and since the notices of our author found in the histories of medicine (with the exception of Freind and Siebold's) are all very scant, even the usually full Haeser dismissing our author in a page and a half—since this is the case, we propose to give a résumé of the whole of the sixteenth book, and then to give a translation of its most important chapters dealing with gynæcology.

We shall first give a list of the chapters, and we shall give the names of the authors from whom we believe Aetius derived the materials for each chapter in question. That Aetius was indebted to Soranus for a large amount of his work will become very evident to anyone who will carefully study the works of these two authors. Aetius frequently acknowledges his indebtedness to Soranus, but, on the other hand, he as frequently does not.

In the edition of the works of Soranus edited by Dietz many chapters were published which Ermerins later on showed were mere interpolations from the works of Aetius, and he struck them out of his edition of Soranus; but even with these chapters taken away from Soranus Aetius remains largely in his debt: "Summatim tamen non dubitandum, quin Aetius plura e nostro Sorano desumpserit."[2]

[1] Maughs, *Jour. Am. Med. Assoc.*, vol. ii., p. 225, 1884.

[2] Ermerins, *loc. cit.*, xiii.

In the following list the chapters marked thus (*) are those which were published in Dietz's edition of Soranus, but were rejected by Ermerins:

CAP.

i. De uteri situ, etc. (Galen: De dissectione vulvæ, cc. i.-ix.)
ii. Quæ intra pregnantis uterum nascuntur. (Galen: De dissectione vulvæ, c. x.)
iii. De secundæ generatione. (Galen: De dissectione vulvæ, c. x.)
iv. Menstruæ mulierum purgationis ratio. (Soranus, c. iv.)
v. Notæ futuræ virginum purgationis. (Soranus, c. v.)
vi. Quando semen appareat.
vii.* Fœcundarum mulierum dinotio. (Soranus, c. ix.)
viii. Quomodo cognoscantur quæ conceperunt. (Soranus, c. xii.)
ix. Notæ fœtus masculi ac fœminæ. (Soranus, c. xiii.; Hippocrates: Sterility; Littré, Vol. VIII., p. 417.)
x.* De pica. (Galen: De causa sympt., I. vii.; Soranus, c. xv.)
xi. De tumoribus pedum in prægnantibus. (Soranus Dietzii, c. 24.)
xii.* Cura prægnantibus adhibenda. (Aspasiæ; Soranus, c. xiv.)
xiii. Notæ partus secundum naturam futuri. (Soranus, c. xx.)
xiv. Parientibus facienda. (Soranus, c. xxi.)
xv.* Cura circa ægre parientes adhibenda. (Aspasiæ; Hippocrates: Aphor., V. xlix.)
xvi. Quomodo opem ferre oportet his quæ non tuto concipiunt. (Soranus, c. xvii.)
xvii. Pessi sterilitatem inducentes. (Soranus, c. xvii.)
xviii.* Fœtum corrumpentia. (Aspasiæ; Soranus, c. xvii.; Hippocrates: Aphor., V. xxxi.)
xix. Signa futurum abortum præcedentia. (Soranus, c. xviii.; Hippocrates: Aphor., VI. xxxvii.)
xx. Quomodo abrupti fœtus ejectioni opitulemur. (Soranus Dietzii, c. xxv.)
xxi. De his quæ bimestres aut trimestres fœtus abortiunt. (Hippocrates: Littré, IV. 549, VII. 337.)
xxii. Pariendi difficultatis causæ. (Soranus, cc. lxii., lxiv.)
xxiii.* De fœtus extractione, et exectione. (Philumeni; Soranus, c. lxv.
xxiv.* De secundæ eductione. (Philumeni; Soranus, c. xxii.) ?
xxv.* Cura post fœtus exectionem. (Aspasiæ.)
xxvi. Causæ sterilitatis; curatio.
xxvii. Frigidoris uteri signa, ac curatio.
xxviii. Calidoris uteri signa, ac curatio.
xxix. Humidioris uteri curatio.
xxx. Siccioris uteri curatio.

CAP.
c.* De hernia aquosa mulierum. (Aspasiæ.)
ci. De hernia inguinis mulierum. (Aspasiæ ?)
cii.* De hernia varicosa. (Aspasiæ.)
ciii. De nymphæ sectione.
civ. De cauda.
cv.* De thymis. (Philumeni.)
cvi.* De condylomatis. (Aspasiæ.)
cvii. De rimis, ac fissuris uteri.
cviii. De tuberculis uteri miliaribus.
cix. De scabris uteri pustulis.
cx. De alarum pudendi muliebris abscessu.
cxi. Ad umbilicum prolapsum.
cxii. Ad rugas ventris.
cxiii.-cxxiii. Preparation of remedies.

C. i.: "De uteri situ, magnitudine, ac forma." This chapter is a paraphrase of the first nine chapters of Galen's work "De dissectione vulvæ." He falls into the same error as Galen with regard to the size of the uterus, but he gives an excellent description of the Fallopian tubes, and makes the remark that during sexual intercourse the uterus draws the seed from the ovary.

Cc. ii., iii.: "Quæ intra pregnantis uterum nascuntur; De secundæ generatione." These chapters are paraphrases from the tenth chapter of Galen's work on the dissection of the uterus. He concludes the third chapter with the remark: "At si quis diligentius speculari hæc voluerit, capram aut vaccam, vel cervam dissecare poterit, ossa pubis removendo, et cutem apte resecando."

C. iv.: "Menstruæ mulierum purgationis ratio." The author deals with the menstrual flow, the usual age at which it sets in, its quantity and duration. The chapter is derived from Soranus, c. iv.

C. v.: "Notæ futuræ virginum purgationis." The signs and symptoms of an approaching menstrual period are given from Soranus, c. v.

C. vi.: "Quando semen appareat, et conceptus tempus adveniat." This chapter contains but a few lines, the substance being that the semen is provided at the fourteenth year. This chapter does not correspond to any in Soranus, the nearest approach being the remark in c. iv., "that menstruation shows itself about the fourteenth year, at the same time that the signs of puberty and the swelling of the breasts are apparent."

C. vii.: "Fœcundarum mulierum dinotio." Aetius acknowledges Soranus as the author of this chapter (Soranus, c. ix.).

C. viii.: "Quomodo cognoscantur quæ conceperunt." Here are enumerated the signs of pregnancy. This chapter is taken from the latter part of Soranus, c. xii.

C. ix.: "Notæ fœtus masculi ac fœminæ." This chapter is taken from Soranus, c. xiii., both authors quoting Hippocrates (Littré, VIII., p. 417), who said that a good colour, quickness in movement, and swelling of the right breast, denoted that a woman had conceived a male child.

C. x.: "De pica." Aetius acknowledges Galen ("De causa sympt.," I. vii.) as the author of this chapter, but both authors are indebted to Soranus, c. xv. Our author derives the name of the disease from the bird pica (*κίσσα*), or from ivy (*κιττός*), which entwines itself round various objects; so also do the appetites in these women fasten on a variety of peculiar articles of diet. He gives the symptoms and treatment very fully.

C. xi.: "De tumoribus pedum in prægnantibus." This chapter corresponds to c. xxiv., Soranus Dietzii, and consists of but a few lines, which tell how to make up certain preparations for treating swelling of the feet in the pregnant.

C. xii.: "Cura prægnantibus adhibenda." Aetius acknow-

ledges Aspasia as the authoress; the whole chapter, however, corresponds to the first part of Soranus, c. xiv. The advice to the pregnant is excellent, warning them against lifting heavy weights, violent exercises, severe clysters, etc.

C. xiii.: "Notæ partus secundum naturam futuri." A short chapter derived from Soranus, c. xx., and dealing with the signs of an approaching labour.

C. xiv.: "Parientibus facienda." This chapter consists of few lines, and merely deals with the management of the breath in labour. It appears to us to be derived from Soranus, c. xxi.

C. xv.: "Cura circa ægre parientes adhibenda." Our author acknowledges Aspasia as the authoress. It is a short chapter, and deals with some aspects of a difficult labour. After the labour, if the after-birth remain, the author warns against extracting it by force, but recommends (without acknowledgment) the advice given by Hippocrates ("Aphor.," V., xlix.), to apply a sternutatory, and shut the mouth and nostrils and hold the breath.

C. xvi.: "Quomodo opem ferre oportet his quæ non tuto concipiunt." The first part of this chapter enumerates the various causes why it is dangerous for some women to conceive, and Aetius is indebted to Soranus, c. xvii., for much of his material. He remarks "that to prevent conception the mouth of the womb may be smeared with various substances, such as honey or opobalsam."

C. xvii.: "Pessi sterilitatem inducentes." This chapter is devoted to receipts for pessaries for producing sterility, some of which are taken from Soranus, c. xvii.

C. xviii.: "Fœtum corrumpentia." Aetius acknowledges Aspasia as the authoress. Many of the passages correspond to Soranus, c. xvii., yet it is to be remarked that, although

Soranus quotes so many authors, he does not mention Aspasia. The sentences corresponding to those of Soranus, therefore, in this and other chapters have probably been interpolated by Aetius into Aspasia's original account, if, indeed, she lived anterior to Soranus, as also have the quotations from Hippocrates. In this chapter he quotes Hippocrates: "Sanguis enim a muliere pregnante evacuatus abortum facit" ("Aphor.," V. xxxi.). Soranus also quotes Hippocrates to this effect. Aetius says that the corruption of the fœtus is dangerous, especially if the woman is robust and healthy. He thinks that the second and fourth months are to be avoided, while the third month should be chosen if we wish the patient to abort, and this is to be brought about by sitz-baths, external applications, bleeding, and pessaries made of iris, galbanum, turpentine, etc.

C. xix.: "Signa futurum abortum præcedentia." Aetius has taken this chapter almost word for word without acknowledgment from Soranus, c. xviii. The signs relied on are: first a discharge of aqueous fluid, rapidly becoming sanguineous; then are passed clots and pieces of membrane; the patient has pains in the loins, pelvis, lower part of the abdomen, groins, head, eyes, and articulations; feeling of chilliness about the body, sometimes fever and shivering, sometimes epileptiform spasms. Hippocrates is quoted as saying that when the abortion is spontaneous it produces less fulness of the breasts. Soranus then quotes Diocles, that a feeling of coldness is experienced in the thighs, but though Aetius gives the quotation he does not mention Diocles. The passage mentioned by our author from Hippocrates occurs in the "Aphorisms" (VI. xxxvii.): "In a pregnant woman, if the breasts suddenly lose their fulness she has a miscarriage."

C. xx.: "Quomodo abrupti fœtus ejectioni opitulemur."

If the fœtus be retained in the neck of the uterus, the whole body (but especially the parts in the neighbourhood of the uterus) is to be bathed with oil of Cyprus, and the patient is to be made to sneeze. If the uterus is closed through inflammation we introduce dry sponge; at first the pieces are small, and then larger; these are shaped like a pessary, and are to be smeared with medicinal substances. Should the secundines be alone retained, they are not to be extracted with force, but the cord may be tied to the patient's leg. He postpones further directions until a later chapter (c. xxiv.). This chapter corresponds to c. xxv., Soranus Dietzii.

C. xxi.: "De his quæ bimestris aut trimestris fœtus abortiunt." Aetius is indebted to Hippocrates for this chapter (Littré, IV. 549, VII. 337). The author supposes that the excess of humour determines the abortion, and the treatment aims at drawing off this excess by administering drugs and applying pessaries.

C. xxii.: "Pariendi difficultatis causæ." Most of this chapter has been taken from Soranus (cc. lxii., lxiv.), and, being lengthy, it would be useless to give a short extract. The chapters, as we have had occasion to observe in dealing with Soranus, are among the most excellent that we have received from the ancients on obstetrics.

C. xxiii.: "De fœtus extractione, ac exectione." Aetius acknowledges Philumenus as the author of this chapter, but the substance of the chapter is to be found in Soranus, c. lxv.

C. xxiv.: "De secundæ eductione." This is from Philumenus, but many of the passages correspond to Soranus, c. xxii. Aetius advises the introduction of the left hand into the womb, but warns that direct traction may cause prolapse (Soranus says inversion) of the womb. He gives directions for dilating the os with the finger.

C. xxv.: "Cura post fœtus extractionem." From Aspasia. This is made up chiefly of receipts.

C. xxvi.: "Causæ sterilitatis; curatio." Aetius enumerates a long list of affections of the womb which cause sterility, and among them he says, "aut quod vasa ejus clausa sunt et obstructa, aut per cicatricem inductam excæcata"; the vasa referred to might possibly be the Fallopian tubes.

Cc. xxvii.-xxx. These four chapters deal with sterility from the frigid, warm, the humid, and the dry womb. The descriptions appear to refer to various conditions of metritis and endometritis, and the chapters are chiefly made up of receipts. Fumigation by a reed is referred to in the treatment of the frigid womb.

C. xxxi.: "Diversarum affectionum, ob quas mulieres non concipiunt, curatio." Flatus in the womb is given by our author as a cause of sterility. In another place he says that if the os uteri is too open astringents are to be used, and if the uterus is displaced it should be corrected by the sound.

C. xxxii.: "Potiones, pessi, suffitus ad conceptionem." This is devoted to numerous receipts for pessaries, etc., to enable the patient to conceive.

Cc. xxxiii.-xxxvi. These chapters deal with the milk in the breast, and the pathological conditions produced by it; c. xxxiii. is similar to c. lxvi., Soranus Dietzii.

C. xxxvii.: "Ad mammas inflammatas." Aetius acknowledges Philumenus as the author of this and the next chapter, "Ad induratas mammarum inflammationes" (Soranus Dietzii, c. lv.); these chapters are mainly composed of receipts.

C. xxxix.: "De mammarum abscessu." In cases where the breast has to be incised for abscess, the author directs that an incision may be made into it with safety, but the

nipple must not be cut, as that would interfere with its future use (Soranus Dietzii, c. lvi.).

C. xl.: "De mammarum fistulis." This is from Leonides. The author explains that a fistula may result from the rupture of an abscess. The chapter corresponds to c. lvii., Soranus Dietzii.

Cc. xli., xlii. These chapters deal with noma and phagedænic ulcers of the breast; the writer explains how the latter differ from cancerous ulcers. C. xlii. corresponds to c. lviii., Soranus Dietzii.

C. xliii.: "De cancris mammarum." This is taken from Archigenes and Leonides. The author classes cancer of the breast under two headings—those with ulceration and those without. In the breast it consists of a large tumour, unequal and resistant to pressure, having extensive roots and accompanied by varicose veins. There is pain, and at times malignant phlegmon in the axillæ. It is generally incurable. The application of poppy-heads to relieve the pain is recommended (Soranus Dietzii, cc. lix., lx.).

C. xliv.: "Qui cancri curatu faciles, et qui difficiles." The author mentions the cancers which he thinks are able to be cured, and those which he considers incurable. The chapter corresponds to Soranus Dietzii, c. lx.

C. xlv.: "Cancri chirurgia." This is from Leonides. The operation of incision of the breast is here well described, the cautery being used to stop hæmorrhage and to destroy the disease (Soranus Dietzii, c. lxi.).

Cc. xlvi.-xlix. These chapters deal with the treatment of the case after an operation on the breast, and the treatment of cases of cancer with and without ulceration. Cc. xlvii.-xlix. correspond to cc. lxii.-lxiv., Soranus Dietzii.

C. l.: "De mammis induratis." This is from Leonides, and corresponds to Soranus Dietzii, c. lxv.

Cc. li.-lxii. : The author deals at considerable length in these chapters with the various causes, and the treatment, of amenorrhœa (*vide post*, amenorrhœa). Aetius acknowledges Rufus and Aspasia as the authors of chapter li.

C. lxiii. : "De mensium stillicidio." This chapter is derived from the second part of Soranus, c. xlviii. ; it deals with cases of scanty and painful menstruation, and contains nothing but what can be found in Soranus.

C. lxiv. : "De nimia mensium purgatione." Aetius enumerates various causes which lead to the loss of much blood from the genital organs; among them may be mentioned a labour, or an abortion, or an erosion. The symptoms that follow excessive loss are pallor, sometimes a rise in temperature, loss of appetite, and the digestion is affected, while sometimes œdema of the feet may be present. He advises that legs should be bandaged, but objects to the application of sponges soaked in posca, lest the uterus or bladder should be chilled; in this he differs from Soranus. This chapter is c. cv. of Soranus Dietzii.

Cc. lxv.-lxvii. : "De fluxu muliebri." These chapters deal with the red and white flux, and are probably all derived from Archigenes, who is acknowledged as the author of the first of them.

Cc. lxviii.-lxix. : "De uteri strangulatione." Aetius does not acknowledge the author from whom these chapters are derived, but it is evident that he took most of his material from Galen ("De locis affectis," VI. v.), who in turn was much indebted to Soranus, c. li.

Cc. lxx., lxxi. : "Unctiones ad uteri suffocationem," and "Varia auxilia ad uteri strangulationem." These two chapters are from Philagrius, and correspond to Soranus Dietzii, cc. cxii., cxiii.

Cc. lxxii.-lxxvi. These chapters are all taken from Soranus, and Aetius acknowledges his authority. Chapter lxxiv., entitled "De furore uterino," though stated to be from Soranus, does not correspond to any of the chapters that have come down to us in the works of that author. Ermerins says: "Apparet caput Sorani nomen apud Aetium inscriptum ferro quod ab auctore nostro non est relictum." The other chapters deal with prolapse of the womb, fluxus seminis, and the debilitated uterus.

C. lxxvii.: De reclinatio, aversione, ac recursu uteri." Aetius acknowledges Aspasia as his authority for this chapter, but many of the passages are similar to those in the fifth chapter of the sixth book of Galen's "De locis affectis." It deals with the various displacements of the womb, and mentions the knee-elbow position, as well as rectal examinations and the use of the sound in rectifying the neck of the uterus.

C. lxxviii.: "De uteri inflatione." This chapter is a paraphrase of Soranus, c. lvi. It deals with septic endometritis and metritis. Soranus directs that the midwife should introduce her finger into the uterus if she thinks that clots are the cause of the trouble. The translator of Aetius uses the following words: "Obstetrix digitum illitum in pudendi sinum immittat."

C. lxxix.: "De uteri hydrope." The author says that when the menses have been suppressed for some time, and the patient has not become pregnant, the uterus becomes filled with humour, and small bladder-like bodies are developed in the fluid. With this the abdomen becomes swollen, and the patient has a slow walk, and breathes with difficulty. The above description evidently alludes to hydatidiform degeneration of the chorion. (Soranus Dietzii, c. cxx.)

C. lxxx.: "De mola uteri." The mola referred to here is a

fibroid tumour of the uterus, and the description is taken from Soranus, c. lviii.

C. lxxxi.: "De tumore uteri laxo." In this short chapter an œdematous condition of the uterus is described; it is taken from Soranus, c. lvii.

C. lxxxii.: "De Satyriasi." This chapter deals with a perverted sexual feeling brought about by pruritus of the genitals. From Soranus, c. lix.

C. lxxxiii.: "De uteri inflammatione." Aetius attributes this chapter to Philumenus; it nevertheless contains much that is in Soranus, c. lx.; we shall give a résumé of it in dealing with metritis (*vide post*).

C. lxxxiv.: "De utero in scirrhi tumorem indurato." Aetius acknowledges Soranus as his authority. On referring to Soranus we find that chapter lxi. of that author has the same title, but, being a mere fragment, we cannot compare the two chapters. The extract given by Moschion does not bear much resemblance to the subject-matter of the chapter in Aetius. It appears to us that the description given by Aetius is meant to apply to myoma of the uterus, for he says: "Scleroma is a form of scirrhus, and is chiefly found in the cervical region, where it causes a certain amount of swelling with a little pain. Scleroma may also occupy the fundus of the uterus as a tumour."

C. lxxxv.: "De uteri abscessu." This chapter, with the next, "Abscessus oris uteri chirurgia," are from Archigenes; Aetius acknowledges the former, but not the latter. The description given of the opening of an abscess in the broad ligament is one of the most interesting in the work before us, as we have vividly brought before us the technique, the instruments, the position of the patient, and the after-treatment. The writer describes the abscess as though it were a

uterine abscess, but this does not affect his description of the technique of the operation.

C. lxxxvii.: "Abscessus uteri inter intestina, et peritonæum membranam rupti curatio." This chapter deals with a pelvic abscess which points to the groin, and directions are given for opening it in that situation by the knife, unless it be a suppurating hæmatocele, when the cautery is recommended.

Cc. lxxxviii.-xc.: "De uteri exulceratione." These chapters are from Archigenes. The author points out that there are various causes for ulceration of the cervix, such as an eroding flux, injury from acrid medication, from the bursting of an abscess, from difficult labour, extraction of the fœtus, and other causes. He describes the discharges in such cases, and directs that the seat of the ulceration should be examined by the speculum, and that the treatment should be by pessaries, and for the pain poppy-heads. He ends the chapter by giving directions for treating ulceration of the labia.

C. xcii.: "Ad uteri nomas." From Aspasia.

C. xciii.: "Quæ ad cicatricem ducunt." From Asclepiades.

C. xciv.: "De cancris uteri." From Archigenes. The author divides the cancers of the uterus into ulcerative and non-ulcerative cancers. Various receipts are given for local treatment, but no operative measures are described. In a later chapter, in dealing with hæmorrhoids (polypi uteri), Aetius warns the reader against touching such growths if they are malignant in character.

C. xcv.: "De uteri obturatione." This chapter is probably the one of greatest interest in the whole work, on account of the excellent description given by our author of the use of sets of sponge tents for dilating the cervix.

C. xcvi.: "De utero non perforato." This chapter is

largely derived from Celsus (VII. xxviii.), though it gives somewhat fuller details. Aetius recommends that the speculum be used so as to keep the newly-formed canal open, and with this end he also recommends the introduction of a pipe made of tin.

C. xcvii.: "De hæmorrhoidibus uteri." This chapter is from Aspasia. The hæmorrhoids are said by our author to occur at the mouth of the womb or in the pudendum. They are probably polypi, and Aetius recommends that they should be examined by the speculum.

C. xcviii. "De calculo uteri." Aetius says that occasionally a calculus may be formed in the uterus. He describes a bimanual manipulation, one finger in the rectum and the other hand on the abdomen, in order to expel the stone.[1]

C. xcix. "De calculo vesicæ muliebris." The directions given for the incision in case of stone are as follows: "Tunc paululum supra pudendi alas, quo loco calculus occurrit sectionem facito." Neither the directions given by Aetius, "supra pudendi alas," nor those by Celsus, "sub ima sinisteriore ora," make the exact place for the incision very clear.

Cc. c.-cii.: "De hernia." From Aspasia.

C. ciii.: "De nymphæ sectione." The operation here described refers to amputation of the enlarged clitoris; nympha and clitoris were used as synonymous terms.

C. civ. "De cauda." The cauda here referred to was no doubt a polypus projecting into the vagina. It may occa-

[1] Calculus of the uterus is here referred to; many cases have been reported in recent years, and Everett has collected thirty-three. The calculi represent in most cases the calcareous degeneration of utero-myomata, and while degeneration is rare in polypi, it is not unknown, and these latter are those in which the calculus is most likely to be expelled. Recently Doran stated at the Obstetrical Society of London ("Trans. Obstet. Society of London," vol. xl., p. 225, 1899) that a myoma of the uterus was apt to calcify if its vascular supply were for long obstructed.

sionally have been a hypertrophy of the cervix, but the author would hardly have dismissed the treatment so shortly if the latter had been meant, as amputation in case of hypertrophy of the cervix would have constituted a fairly grave operation, on account of the hæmorrhage.

Cc. cv.-cxxiii.: The remaining chapters deal with small growths about the mouth of the womb, as well as clefts and fissures in that region. The descriptions, however, of the affections are not always sufficiently full to enable one to discern the real nature of the disease mentioned. The final chapters of the work consist of receipts for various ointments and applications.

# CHAPTER XVII.

## AETIUS (*Continued*).

### Physical Examination of the Pelvic Organs.

*Palpation*, *percussion*, and *inspection* are frequently alluded to. In the chapter "De uteri inflatione" (c. lxxviii.) the following occurs: "Ad digitorum pulsationem sonus tympani redditur." Percussion and palpation are both well described in the diagnosis of a fibroid (mola) from ascites and pregnancy (c. lxxx.).

### Vaginal Examination.

In dealing with a case of pelvic abscess (c. lxxxvi.), the author gives us a most excellent and minute account of the method to be adopted in making the vaginal examination with the speculum. Many other passages show the reliance placed on the vaginal examination for diagnostic purposes; thus, we find that (c. lxxxiii.) in inflammation of the uterus, if a vaginal examination be made and the finger be placed in the os, it will be found hard and closed, hot and retracted, especially if the inflammation is in the cervical portion of the uterus. Again, the direction in which the uterus is inclined may be told by the introduction of the finger into the vagina (c. lxxvii.).

Both hands were used in some cases; the patient being placed in position, two fingers of the left hand were inserted

into the vagina, while the right hand compressed the bladder from above (c. xcix.).

### Rectal Examination.

In the case of calculus of the womb the finger of the left hand is inserted into the rectum, while the right hand is placed on the abdomen (c. xcviii.). In treating a case of retroflexion the midwife should introduce her finger into the rectum and push the uterus forward (c. lxxvii.).

### Position of the Patient.

A passage in chapter lxxxvi. shows us the great antiquity of the lithotomy position as regards gynæcological operations (*vide post*, cellulitis). In another chapter the knee-elbow position is referred to thus: In cases of retroflexion the fæces are not passed, nor can a clyster be admitted—"nisi genibus innitatur ægra" (c. lxxvii.).

In treating lateral displacement of the womb the patient should be placed on the side opposite to the displacement (c. lxxvii.).

In the after-treatment of imperforate vagina the patient is kept on her back with a pillow between her legs until the cicatrix is formed (c. xcvi.). In treating prolapse of the womb the patient is placed on her back, and the buttocks raised (c. lxxvi.).

### Therapeutic Agents.

*Speculum*.—The best description of the method of using the speculum which has been handed down to us is to be found in chapter lxxxvi. (*vide post*, cellulitis).

In diagnosing hæmorrhoids (polypi?) of the uterus (c. xcvii.), Aetius says: "Melius tamen per dioptram deprehenduntur."

*Sound.*—A uterus that is distorted must be straightened and corrected either by the finger or the sound (c. xxxi.). In cases of retroflexion the midwife with her sound, which is directed by her finger, should straighten the neck of the womb (c. lxxvii.).

In operating on imperforation of the upper part of the vagina, the sound should be introduced into the cervical part of the uterus as a precaution, and to serve as a guide (c. xcvi.).

In using the speculum, the operator is advised "per specillum sinus muliebris profunditatem demetiatur," so that he will know how far to introduce the instrument, and thus avoid pressing on the tender uterus (c. lxxxvi.).

*Volsella.*—The volsella is mentioned in the operation for imperforate hymen (c. xcvi.), and in dealing with hæmorrhoids of the uterus (c. xcvii.).

*Dilators.*—The graduated dilators mentioned by Hippocrates are not alluded to by Aetius. In dilating the cervix he used the sponge tents (c. xcv.), and in some vaginal operations rolls of lint (c. xcvi.) and a tube of tin were used; while by the introduction of the speculum the newly-formed canal was kept dilated in case of imperforate vagina (c. xcvi.). Digital dilatation of the os is mentioned (c. xxiii.).

*Catheters.*—The catheter for drawing off the urine is mentioned in several chapters (c. lxxvi.); it is also used as a sound in cases of difficult labour: "Quod si vero calculus affuerit, eum extra vesicæ collum per catheterem propellemus" (c. xxii.).

*Vaginal and Rectal Injections.*—These injections are mentioned in many places (cc. lxxvi., lxxxiii., xcviii.); after rupture of an abscess into the rectum or into the vagina we must inject pomegranate or rose oil, and if the pus is offensive

inject astringents (c. lxxxv.). The injection may sometimes be given by an ear syringe (per auricularem—c. lxxxvi.).

The sitz-bath (c. lxxxv.); fumigations (cc. xxvii., lxxxv.); fomentations externally (cc. lxxxiii., lxxxv.), and by means of a sponge in the vagina (c. lxxxv.), or to the prolapsed womb (c. lxxvi.); counter-irritation (c. lxxvi.); cautery for hæmorrhage (c. xlv.); cataplasms containing linseed, fenugreek, and turpentine (c. lxxxv.); bleeding (c. lxxxv.) and cupping (c. lxxxiii.); massage (c. lxxxiii.); pessaries for the vagina and rectum—all these subjects are dealt with by Aetius.

*Tents.*—In the chapter "De uteri obturatione" (c. xcv.), we have the first mention of the sponge tent being used for the purpose of dilating the cervix; the passage is as follows: "But if we find that the parts are soft to the touch, we should introduce dried sponge, to which is attached a piece of thread, in order that the narrow part of the canal may be dilated; and if the sponge slip out, we should place a larger piece in the uterus, and for this reason it behoves us to have several different sizes ready" (c. xcv.).

*Vaginal Plugs.*—Plugs made of wool, and soaked in wine and various astringents, are mentioned by Aetius (c. lxxvi.).

*The mechanical pessary* is not mentioned by our author.

### Anatomy (c. i.).

Aetius in the first place mentions the names applied to the uterus, such as metra, matrix, hystera, and then gives the various origins of these terms. He next deals with the situation of the uterus, giving what is obviously a paraphrase of Galen's description. He follows Galen in his mistake concerning the length of the womb, and says that the fundus extends far beyond the bladder, reaching up to near the umbilicus. He remarks that the fundus is similar in shape

to the bladder, but it differs from that organ in having nipple-like projections, called cornua, produced from either side and facing towards the loins.

The horns, he says, at first run upwards, then downwards, and become gradually narrower, so as to resemble veins. These narrowed portions of the horns with sinuous curves reach to the ovaries (testes), which are placed by the side of the uterus, one ovary on either side of the fundus close to the cornua, and through these sinuous curves of the cornua the uterus draws the semen from the ovaries during coitus.

The ovaries are not round or oblong and covered by a delicate fleshy membrane, as in the male, but they are small, flat, and glandular, and are covered by a delicate membrane. He then deals with the ligaments of the uterus and its blood-supply. He says that two veins and two arteries come from the vena cava and aorta. These four vessels are distributed to the uterus, but before entering it they give off branches to the ovaries, and it is from these vessels that the menstrual blood comes. Other vessels are also distributed to the uterus, and give branches to the ovaries and cervix. Aetius then proceeds to give Galen's descriptions of the tunics of the womb, mentioning the cartilaginous feel of the cervix, and recording the fact that a sound cannot enter the os at times, and that it is closed up when the woman is pregnant. He mentions the vagina as the sinus or pudendum, and gives its length as the width of six fingers, remarking that it is soft and delicate in a young woman, but that child-bearing and the escape of the periods made it indurated. He also draws attention to the variation in thickness of the walls of the uterus.

In chapter ciii. Aetius describes the appearance and situation of the clitoris.

### 1. Peritoneum and Connective Tissue.

*Parametritis and Pelvic Abscess.*—The title of chapter lxxxv. is "De uteri abscessu," and this Aetius has taken from Archigenes; the description in reality refers to a case of pelvic suppuration. The author opens this chapter by saying that a uterine abscess results from preceding inflammation, as is the rule in other parts of the body. Therefore, in the first place the usual signs of inflammation are apparent, and at about the time that the suppuration begins the pains increase, and we have fevers and rigors chiefly towards evening; the swelling then increases, and the pains become more acute. Sometimes there is retention of urine, sometimes the fæces are not passed—sometimes both. The exact part affected will be indicated by localized pain, and if this pain cannot be shaken off, then we must resort to measures which aid suppuration, such as poultices containing linseed-meal, fenugreek, turpentine, etc., which are applied to the lower portion of the abdomen and to the lumbar regions. Besides this, we should assiduously foment the vagina with a sponge, and conduct into it vapours by means of a reed which is inserted into the perforated cover of a jar. Sitz-baths should be frequently taken; the fluid composing the bath should have drawing properties. Should, however, the pains continue to increase, we must add to the poultices boiled or bruised poppy-heads. Aetius then gives other remedies, some being applied in the form of pessaries.

Should the abscess burst into the bladder, and we see pus in the urine, we should then give the patient milk to drink and administer cucumber seeds. If the abscess bursts into the rectum, we should inject into the bowel a decoction made from the rind of the pomegranate. If the abscess rupture

into the vagina, and the pus be laudable, inject rose oil, etc.; but if the pus be offensive, the astringent injections must be used; if the discharge be very fœtid, the vagina is to be washed out with mead.

In chapter lxxxvi. our author gives the directions for operating on "abscessus oris uteri." If the abscess be situated about the mouth of the womb, we must not be too prompt in having resource to incision, but wait until the disease is matured and the inflammation has increased to its utmost, and the parts pressing on the pus are thinned. The woman is placed supine on a seat, with her legs drawn up on her abdomen, and her thighs separated from one another. Let her arms also be brought down under her legs, and secured by proper ligatures passing over her neck. The patient being placed before a clear light, the operator sits on her right side, and he is then to make an examination with a speculum proportionate to her age. The depth of the vagina is to be measured with a sound, lest the stalk of the speculum be too long, and so the uterus would be pressed against it. And if it is found that the stalk of the speculum is longer than the vagina, folded compresses should be placed on the labia or sides of the pudendum, so that the speculum may be placed firmly on them. The stem should be introduced, having the screw at the upper part; and the speculum is to be held by the surgeon, but the screw is to be turned by the assistant, so that, the blades of the stem being separated, the vagina may be distended. If when the abscess is exposed it be found soft, then its apex is to be divided with the scalpel or sharpened probe; and after the pus has been evacuated, a very soft tent soaked in rose-oil is placed in the incision, or, rather, away from the opening, in the vagina of the patient, so as not to produce compression.

The author then goes on to say that, besides the above treatment, the vulva and loins should have applied to them unwashed or clean wool that has been dipped in oil, and that on the third day the patient should have a sitz-bath, followed by the introduction of a tent. If the part is cleansed with difficulty, an injection of the decoction of iris may be thrown up with an ear-syringe.

The author ends the chapter with the remark that if the abscess should be within the mouth of the uterus we must not operate.

The subject of pelvic suppuration is continued in chapter lxxxvii. The author says, when an abscess bursts between the intestine and the peritoneal membrane, and surrounds the uterus and bowel, the swelling that forms chiefly surrounds these parts and indicates what has happened. If the abscess ruptures into the uterine cavity, relief from pain is experienced, and the os uteri becomes soft to the touch. The pus should be encouraged to reach the surface, and after the skin has become sufficiently thinned an opening should be made with a probe in the most prominent part of the swelling, from which part we may hope to obtain the more perfect evacuation. If the swelling be due to an outpouring of blood (pelvic hæmatocele), instead of the sharp probe or the scalpel we should apply the cautery to the summit of the swelling, and by this means evacuate the pus. After opening the abscess, the wound should be attended to, and should be bathed with honey-water, and should be fomented with a sponge twice during the day and once at night. Sitz-baths and injections are also to be used.

## 2. Affections of the Uterus.

*Stenosis and Rigidity of the Cervix.*—Obstructions round the mouth or the neck of the womb arise either from advanced ulceration or from inflammatory hardening, by which means the parts become so narrow that the semen cannot gain an entrance to the womb, or if it does enter it is not retained, because the uterus cannot contract, on account of the callous condition. Sometimes semen is admitted, and a fœtus is developed within the too narrow os. The conception leads to the patient's death, for the child cannot be born on account of the narrowness of the canal.

Hip-baths and pessaries are to be first tried. But when we find that the parts are soft to the touch we should introduce pieces of dried sponge, to which are attached pieces of thread, in order that they may dilate the narrow portion of the canal; and if they should slip out, then we should place larger ones in, and for this reason it behoves us to have several different sizes ready. After this we should smear the following preparation on the sponge tents before inserting them: red sulphuret of arsenic, dry alum, yellow sulphuret of arsenic (these to be rubbed up with honey).

If we perceive that dilating by the sponge tent has not been sufficient, and that inflammation has been induced, then we should smear on the tents the following preparation: iris, goose-grease, turpentine, frankincense, etc. When the inflammation has subsided and the place is sufficiently well opened, we may cover a tent with cerate prepared from rose-oil and goose-grease; and these tents are to be used continually in order to cause a cicatrix, so that the place may become gradually firm (c. xcv.).

In chapter xvi. Aetius says that, on account of the narrow-

ness of the cervix in some women, parturition may be fraught with danger; while in chapter xxvi. he says that a woman may be sterile on account of the mouth of the womb being closed from cicatrization. In chapter li. Aetius says that after an abortion we may get ulceration of the os, which then leads on to cicatrization, after which we may get obstruction.

*Laceration and Erosion of the Cervix.*—Fissures round the mouth of the womb are caused by difficult parturition on account of the size of the child's head; they may also be found in the pudendum, there caused by the escape of irritating humours. At first they escape notice, while the pains from the labour are quite recent; but afterwards they become slightly felt by the patient, for both after a manual examination and after coitus pain is produced, and they bleed from the friction. They are discovered when the vagina is dilated (by the speculum), for fissures form round the circle of the os uteri.

In the treatment Aetius says all surgical aid and medicines of an irritating nature are to be avoided, for such induce inflammation and convulsive movements. He recommends hip-baths and pessaries. After the ulcers are cicatrized we may use calamine (c. cvii.). When fissures become chronic they may become converted into condylomata.

Condylomata are reddish projections. The rugæ that are encountered round the os uteri, whilst inflamed, rise up and become indurated, and sometimes a swelling and thickening results. Particularly during the menstrual period are condylomata produced, and after parturition they rise up and can be recognised by touch. Pessaries and astringents are recommended for the treatment (c. cvi.).

Aetius says that an erosion may be the cause of menorrhagia (c. lxv.).

*Ulceration of the uterus* is dealt with in chapter lxxxviii. Aetius, quoting Archigenes, says that ulceration of the uterus is often due to an eroding flux, to injuries from acrid medications, from the bursting of an abscess, from difficult labour, after abstraction of the fœtus, or from the latter becoming corrupted. The patient experiences shooting pains in the parts affected, while, if the ulcer is foul, fetid and sanious discharges may be produced, and reflex symptoms, such as pains in the head, eyes and hands. The ulcer thus indicated may be discovered by the speculum; but if situated out of view the diagnosis is made from the nature of the discharge.

The treatment is by sitz-baths, injections and pessaries, and a decoction of poppy-heads is recommended when the pains are severe.

In chapters lxxxix., xc., carbuncular and sordid ulcers of the uterus are alluded to on the authority of Archigenes; while in chapter xcii. "nomæ et ulcera depascentia" are mentioned from the works of Aspasia.

*Cancer of the Uterus* (c. xciv.).—Of the cancerous tumours of the uterus, some ulcerate, and some do not, as in cancer of the breast. When there is no ulceration, the tumour found round the os uteri is hard and resistant to the touch, uneven, prominent, feculent in colour, red or livid; sharp pains are felt in the groins, belly, vulva, and loins, and these are increased by manual examination and by various medications.

Should the cancer be an ulcerated one, in addition to the pain, hardness, and swelling, we find ulcers spreading and irregular, and for the most part foul, prominent, and white in colour; some, however, appear feculent, livid, red and bloody.

The discharge that comes from cancers is always thin, watery, black or reddish-yellow, with a strong odour. Occa-

sionally we have hæmorrhage, and the other signs which indicate inflammation of the uterus. The complaint, as Hippocrates said, is incurable, but may be relieved by baths of fenugreek and mallow, and by cataplasms of a similar kind. Various remedies are then given by Aetius (who has extracted his chapter from Archigenes) to alleviate pain and for hæmorrhage. No mention is made of operative treatment; in fact, in chapter cv. the writer warns the reader against surgical interference in case of malignant thymus, on account of the danger of hæmorrhage. Aetius also advises that malignant polypi be left alone (c. xcvii.).

*Metritis* (c. lxxxiii.).—Inflammation of the uterus, our author says (taking Philumenus as his authority), may arise from many causes, such as injury, suppression of the menses, abortion, ulceration, too frequent coitus, long walks, cold, etc. Sharp pains in the lower part of the abdomen and loins point to the trouble, and if a vaginal examination be made, the os will be found hard and closed, hot and retracted, especially if the inflammation happens to be round the os or in the cervical portion of the uterus.

The symptoms of inflammation of the uterus will vary with the position of the inflammation; thus, displacements may occur following on inflammation of the uterine cavity or fundus, while stoppage of the bowels and pains in the spine would point to inflammation of the posterior aspect of the womb; difficulty in passing water, or passing it drop by drop, points to the anterior wall being the seat of the trouble, and if the inflammation affects the lateral aspect of the uterus the groins become swollen, and the legs are incommoded and are moved with an effort.

The treatment is then given at great length.

Rest in a warm, quiet place, no movement of the legs,

massage and fomentations to the feet and hands. The bowels are emptied by enemata. Warm water and ptisan are given as drinks. Bleeding may be practised, and the diet is restricted. Counter-irritation, embrocations, pessaries, baths, may all be employed in some cases, while in other cases cupping-glasses and scarification in the lumbar region may be resorted to. Pessaries and vaginal injections are also to be used.

Aetius gives in chapter lxxviii., under the heading of "De uteri inflatione," a condensed account of chapter lvi. from Soranus, wherein septic metritis and endometritis are described.

In chapters xxvii.-xxx. Aetius deals with the cold, warm, humid, and dry womb, and his descriptions appear to apply to some forms of chronic metritis and endometritis, and the same remarks apply to chapters lxv.-lxvii., where the various fluxes are considered; while chapter lxxiii, which is entitled "De uteri debilitate" (extracted from Soranus), also refers to chronic metritis. Our author has nothing new to tell us in dealing with this subject, and advocates injections, fumigations, pessaries, sitz-baths, etc.

*Displacement of the Uterus.*—Aetius gives us Aspasia's views on this subject in chapter lxxvii., which is entitled "De reclinatione, aversione, ac recursu uteri." If the menses are suppressed, the veins and arteries that come to the uterus become overloaded, for the blood comes to the mouth of the vessels and it is unable to enter the uterine walls; either because the fluid is too thick, and, being driven against the mouth of the vessels, becomes clotted; or because the mouths of the vessels become closed and the blood cannot pass, and the vessels thereupon becoming filled with humour, the appendages surrounding the uterus become swollen, and

through this distension the uterus is drawn backwards. Should this be equal on both sides, the forces tending to create a reclinatio, a revulsio, and a recursus are equalized (and nothing results). But if the traction is greater on one side than the other, the displacement will occur on that side on which we get the vessels most distended with blood, and the author thinks that the liver is the governing influence on the right side, while the spleen rules the left. In whatever way the uterus is inclined, the finger can tell by touch, and the following signs are also diagnostic: If it is obliquely inclined there is tension in the femoral region of that side, pain, coldness, torpor, etc.; if it is inclined backwards or downwards there is torpor, and difficulty in moving the legs, etc.; defæcation is prevented, nor can enemata be administered—"nisi genibus innitatur ægra"; flatus is retained, and there is pain in the seat, especially if the displacement is a retroflexion "si versus anum reclinatio contigerit."

If the displacement is towards the pubes, we get pain in the lower part of the abdomen, and sometimes suppression of the urine.

In the treatment our author directs that, if the case be one of retroflexion, the midwife in the first place is to introduce her finger into the patient's rectum and push the uterus forward. She is then to make a pessary, 3 inches in length, composed of galbanum and cerate, and to attach a string to it so that it may easily be withdrawn; this pessary is to be introduced into the anus. A plug of wool may be used in a similar manner. On the following day some tepid oil should be injected into the uterus and bowels.

If the traction on the uterus has caused it to assume an oblique position (lateral displacement?), we must first use fomentations, and then the midwife with the sound, which is

guided by her finger, should straighten the neck of the uterus, while the patient should be placed on the opposite side to the direction of the displacement.

Should we get retention of urine at any time during the treatment, we must draw the water off with a catheter.

In chapter lxxxiii., in speaking of inflammation of the uterus, Aetius remarks that inflammation of the upper portion may cause displacement of the os and cervix by dragging the uterus inwards towards the inflammation.

*Prolapse of the Uterus; Hysterectomy.*—Aetius has in chapter lxxvi. given us a résumé of the sixty-sixth chapter of Soranus. He adds nothing of importance, and ends his account with the following: "It is reported that when the whole uterus has been putrid, it has sometimes been removed, and the woman has, nevertheless, gone on living."

*Fibromyoma, Polypus, and Calculus of the Uterus* (c. lxxx.).—The mole is a hard tumour of the uterus, which forms sometimes after inflammation, sometimes after an ulcer in which there has been an overgrowth of tissue. The name "mole" has been given to such tumours because the sufferers from the affection move with difficulty and slowness. With such a tumour we get retraction of the parts above, emaciation, paleness, and loss of appetite. At first there may be a suspicion of conception, for the menses are suppressed and the breasts swollen, and there are stomach troubles, pain in the loins, and a prominent belly; in time, however, the true nature of the affection is perceived, for with the mole we get pains in the abdomen, and we do not have the movements of the child, as in pregnant women. Aetius says that occasionally we may think we are dealing with a case of dropsy, but we distinguish the mole from that affection by its hardness and by the absence of the fluid wave on palpation, and of the tympanitic

sound on percussion. In some cases, however, dropsy may supervene. Sometimes fleshy bodies the size of a walnut are expelled from the front passage; this may occur once in a month, or once in two or three months. Aetius says that some men have given up the disease as incurable, but others are confident that if taken early something may be done; in any case, we should use our best endeavours for our patient. In the treatment he recommends emollient applications, such as baths, pessaries, fumigations, and, later on, dropaces and sinapisms (c. lxxx.).

In chapter civ., under the heading "De cauda," we have the following: In some women a fleshy body springs from the mouth of the womb, and fills up the woman's vagina. It may even project beyond the vulva like a tail, hence its name. In treating this, Aetius directs that the body should be seized by the forceps and resected at its base. The cauda here referred to is probably a large polypus, though the description might also refer to a pediculated fibroid, or to hypertrophy of the vaginal portion of the cervix; neither of the latter would, however, be removed with such ease as the short description of the operation would imply. Adams thinks that the cauda was a cauliflower excrescence (Paul, VI. 70).

In chapter xcvii. Aetius deals with hæmorrhoides uteri, which, as Adams remarks, are probably polypi of the uterus. Our author, quoting Aspasia, says that hæmorrhoids are met with at the mouth or in the neck of the womb, in the womb itself, and occasionally in the vagina. Their presence can be diagnosed by touch, but better still by the use of the speculum. Besides making the patient sterile, they also cause a feeling of weight in the loins during the menstrual period. Those that are varicose or malignant should be left alone, but we may treat the other varieties as we treat piles in the seat.

Those which are hard may be cut out at once, but those that bleed much should have an incision made all round the base, and should then be pulled up by the volsella, and a ligature passed round them; and after a little they may be resected, then treated with astringent remedies.

*Uterine Calculus.*—In chapter xcviii. Aetius says that occasionally a calculus may be formed in the uterus. If we wish to get rid of this, we must have the bowels emptied and the uterus irrigated, and the patient is then to be placed in the supine position with her thighs apart. After this, insert two fingers of the left hand into the rectum, and place the right hand on the abdomen and depress the belly; the combined pressure of the hand above and of the fingers inserted into the rectum will enable us to expel the calculus. If the stone be imbedded in the cervix, or if it adheres to the mouth of the womb, we must expose the parts by means of the speculum, and resect the body with the scalpel; in the after-treatment we apply astringents.

### 3. Affections of the Vagina and Vulva.

*Atresia Vaginæ et Atresia Hymenalis* (c. xcvi.).—Some women have from birth an imperforate uterus, and such cases are classed under three headings. In some the obstruction, composed of membrane or flesh, is situated at the alæ or labia pudendi; in others it is in the vagina; while in others it is at the mouth of the womb itself. In those cases in which the obstruction involves the labia pudendi, we must place the patient in the supine position with the legs flexed and abducted. We then proceed to dissect out the membrane with a probelike instrument until the pudendum assumes its normal dimensions; after this we insert into the wound a

roll of lint and fix it securely, and apply such remedies as will aid the cure by causing suppuration. Later on rose cerate may be applied by means of lint. If, however, after making one incision we find the alæ pudendi closely united by fleshy processes, we must cut the skin on both sides, and then dilate the parts by rolls of lint, following the same line of treatment as given above. During the treatment the patient rests in the supine position, with a pillow between her legs until cicatrization is complete. If the external orifice of the pudendum is patent, we may find the vagina obstructed by a fleshy development, and the result is that but a narrow foramen is found. The patient is placed in the same position for the operation, and a sound is then introduced into the cervical canal of the uterus as a guide, lest we in error make the section too high up. We then dissect by means of a broad speculum below the locality marked by the sound, until the passage appears of normal form. Holding the dissected portion then by means of a volsella, we cut out a figure, quadrangular in shape. Standing the patient upright, the fluid which has collected in the uterus is by this manœuvre allowed to escape; and after this has been done sufficiently, we again place the woman on her back in her former position, and push into the incision a tent soaked in wine and oil, taking the precaution of attaching to the tent a thread, so that it may be easily withdrawn. The parts having been properly bound, we enjoin quiet. During the subsequent days the parts are well irrigated with hydromel, and rolls of lint are introduced into the vagina, after they have been treated with drugs which encourage suppuration. When a cicatrix has been produced, a tube made of tin is introduced, and allowed to remain until the parts are firm. Should the parts, however, become again united, and the os uteri be once

again closed, introduce dry sponge (tents) until such time as the cicatrix becomes hard.

If, however, the membrane obstructs the os uteri, after the patient is placed in the proper position, the vagina is distended by the speculum, and the membrane, having been seized by means of a volsella, is extended, and then twisted round and round so that it becomes all gathered together, after which it is resected by a broad speculum and astringents are applied; then a roll of lint is introduced with a thread attached.

The speculum should be frequently introduced, so as to prevent the cavity being filled with granulation tissue; and sponge tents are also to be used until the lips of the wound shall have become hardened. The tube of tin is also to be introduced into the canal.

*Thymus Pudendi* (c. cv.). (*Papillomata ?*)—The thymus is found sometimes in the labia, sometimes in the vagina, or on the mouth of the womb. It is an uneven excrescence, similar to the clusters of thymus in appearance. In some cases it is harmless; in other cases it is a malignant growth, red, and bloodstained, especially after coitus or after walking exercise. The growths may resemble a ripe blackberry, and can be diagnosed by inspection sometimes without any instrumental aid; but at other times the speculum must be used to see them.

The treatment laid down is to excise the growth, but Philumenus, from whom Aetius takes the chapter, thinks that if the thymus be malignant it should not be excised, for fear of the great hæmorrhage that follows the operation. If we do excise, he warns us against wounding the uterus itself, an accident which may easily be avoided if the thymus be resected close to the volsella.

*Miliary Tubercles* (c. cviii.). (*Ovula Nabothii and Granular*

*Vaginitis ?*)—Sometimes millet-like eminences arise in the neck or at the mouth of the womb, or in the pudendum itself. These can be diagnosed by touch, or with more certainty by the speculum. Where these growths are irritated by coitus, they may become a hindrance to the menstrual flow and to conception.

The treatment is by pessaries impregnated by an astringent, such as alum.

*Eczema* (*?*).—In chapter cix., under the heading "De scabris uteri pustulis," Aetius says: "Scaly pustules are wont to arise on the pudendum and mouth of the womb. These undergo furfuraceous desquamation, and a pruritus results; the patients are much relieved by the application of warm water." He also recommends medicated sitz-baths.

*Abscess* (*Bartholinian ?*) (c. cx.).—If an abscess should occur in the alæ or labia pudendi, and should point towards the seat, it should not be opened: for incisions in this region, which is full of wrinkles, are apt to lead to the formation of a fistula. If, however, the abscess tends towards the meatus urinarius, it may be incised with safety.

### Menorrhagia and Metrorrhagia (c. lxiv.).

Immoderate discharges of blood may take place after labour or after abortions, the vessels being dilated and ruptured or having their mouths open. An erosion may give rise to a hæmorrhage. The symptoms that are observed after hæmorrhage are pallor, sometimes fever, sometimes not; the appetite and digestion are poor; œdema of the foot and body may be present.

In the treatment Aetius directs that the extremities should have ligatures placed round them, and the armpits and groins should be bandaged. The patient should be given posca to

drink, but this must not be cold; while to the parts we should apply much wool squeezed out of wine, rose-oil, or quince-oil, or the oil of myrtle.

Aetius says that he does not agree with those who place sponges that have been squeezed out of cold posca on the uterus, because they prove injurious to the uterus by chilling it. He agrees with injections and astringent remedies, these latter to be placed in the vagina in the form of pessaries; he also approves of the application of cupping-glasses to the breasts.

### Amenorrhœa.

Aetius deals with the above subject very fully in twelve chapters (li.-lxii.). In chapter li., quoting Rufus and Aspasia as his authorities, our author says that naturally or unnaturally some women have no menstrual periods.

Amenorrhœa would be considered a natural condition if the woman had neither disease of the womb nor of any part of her body. Menstruation does not occur before the fourteenth year, and not after the fiftieth. The barren and the pregnant, singers and dancers, do not menstruate; in the case of the latter the exercise consumes the superfluous blood. Women of a warm temperament, country women, and those who take much exercise, lose but little. Lean and fat women seldom conceive (and if fat women do their offspring is puny), and as a rule they lose little blood, for fat women have too little blood in their veins, as it is consumed in forming fat. Those women who lose blood from the nose, or vomit it from the chest, or who have lost much from having been bled, have suppression of the menses. Disease, profuse perspiring, vomiting, purging, cutaneous eruptions, callosities, cicatrices, and diseases of the uterus, may all be factors in amenorrhœa.

### Leucorrhœa.

In chapter lxv. Aetius quotes Archigenes on the flux, and in the following chapter gives full directions for the treatment of the red and white flux (cc. lxvi., lxvii.). When the discharge is red he begins with venesection, and the application to the parts of sponges soaked in astringents.

If the flux is white he recommends exercise, friction, gestation, and astringents.

In chapter lxxii. he deals with fluxus seminis.

### Dysmenorrhœa.

In chapter lxiii. Aetius gives a paraphrase of the second part of chapter xlviii. from Soranus (*vide ante*); he, however, adds nothing of interest.

### Excision of the Nympha (Clitoris) (c. ciii.).

The nympha (clitoris) is a muscular or skinlike body situated above the commissures of the labia, and just where the meatus urinarius is. In some cases the clitoris is so large that it presents a shameful deformity, so that when irritated by the contact of the patient's garments the woman is excited to venery.

The Egyptian custom is to amputate before it grows large, chiefly about the time when the girl is marriageable. The operation is thus performed: The girl is placed leaning back in a chair, and the attendant, a strong adult, seated close to her, places his arms under the popliteal region of the patient, so as to have control of her legs and the rest of her body. Then the surgeon, standing in front of the assistant, seizes the clitoris with a large pair of forceps and pulls it out, holding the forceps with his left hand, while with the right hand he resects the body close to the teeth of the forceps. It is

necessary to mark well the amount we intend to remove, so as not to take the clitoris away by its very roots, but only to remove the superfluous part. It should therefore be resected close to the teeth of the forceps, since the body that we are dealing with is skinlike in consistence and can be drawn out very far, and unless this point is carefully observed the section may easily be carried beyond the proper region, and a shrinking of the part follows, which the Greeks have termed rhœas.

The after-treatment consists in applying a sponge squeezed out of wine or cold water, followed by appropriate dressings.

### Calculus of the Female Bladder (c. xcix.).

Calculus does not occur very frequently in the female's bladder, because the water passage is wide and straight. Should we have to extract a stone, we proceed as follows: The woman is placed on her back, with her hips sloping down and her legs bent back. Two fingers of the left hand are now introduced into her vagina, while at the same time the right hand presses on the bladder from above. Then push the stone towards the neck of the bladder, and force it so that it will advance beyond the sphincter muscle of the neck of the bladder. Then make the incision a little above the labia ("paulum supra pudendi alas") at the place where the calculus is situated, and then extract the stone by means of a pair of forceps. After a dressing of frankincense, place on the belly and loins lint which has been soaked in warm oil, and fix it by bandages. Later on apply ointments which will help cicatrization of the wound.

### Writers on Gynæcology referred to by Aetius.

*Archigenes* was a Greek physician who was born at Apamea, and practised at Rome about 100 A.D., during the reign of Trajan. He was connected with the sect of the Eclectici, and is several times mentioned by

Juvenal (VI. 236; XIII. 98; XIV. 252). He wrote a treatise on the Pulse, and Galen wrote a commentary on it. He also attempted the classification of fevers, and was the first to treat dysentery with opium.

*Asclepiades.*—*Vide* gynæcologists mentioned by Soranus.

*Aspasia* we have already mentioned.

*Leonides* of Alexandria lived probably at the end of the second or the beginning of the third century (Haeser), because he quotes Galen, and is quoted by Cælius Aurelianus. He was a surgeon, and operated on strumous glands, and amputated by the flap operation. He also operated on hernia and fistula. Of his writings nothing remains but fragments preserved by Aetius and Paul.

*Philumenus.*—The date at which Philumenus lived is unknown. Haeser and Siebold place him about 50 to 80 A.D., while Greenhill remarks that it can only be said that he lived in or before the fourth century A.D. He is quoted by Oribasius, Alexander Trallianus, and Rhazes, as well as by Aetius.

*Philagrius* was a Greek writer who lived about 280 A.D. Suidas says that he wrote as many as seventy volumes, but only a few fragments remain for us, and these are preserved in the works of Oribasius and Aetius.

# CHAPTER XVIII.

## PAULUS ÆGINETA.

Paulus Ægineta (Παῦλος Αἰγινήτης) is so called from his birthplace having been in the island of Ægina. We know nothing of his life except that he visited Alexandria; he mentions the fact in the fourth book of his works, in treating on fistula, in these words: "Another remedy which I received in Alexandria" (B. IV., c. xlix.). The time when he lived is determined from the following data: Paul quotes Alexander Trallianus and Aetius, therefore he lived posterior to both these writers; Aetius mentions St. Cyril, Archbishop of Alexandria, whose death is ascertained, from ecclesiastical history, to have happened at the middle of the fifth century; Aetius also notes a medicine recommended by Petrus Archiater, physician to Theodoric, who was posterior to St. Cyril. Aetius did not flourish earlier than the end of the fifth century; Alexander Trallianus is mentioned by Agathias, who set about writing his history about the beginning of the reign of Justin the Younger, A.D. 565. In spite of the above facts, modern authors differ widely in regard to the century in which Paul lived. Adams says Vossius is wholly undecided; Moreau and Le Clerc place him in the fourth century; Van der Linden and Conringues in the fifth; but Freind, Albertus Fabricius, Hutchinson, Sprengel, and most of the later writers on the

ancient history of medicine, bring him down as low as the seventh century. Adams, Haeser, Milward, and Siebold place him at the end of the sixth or the beginning of the seventh century.

The works of Paul are compilations, but they are the compilations of a learned physician, a skilful surgeon, and a man well versed in gynæcology. He drew his material from all available sources; particularly is he indebted to Galen, Oribasius, Aetius, and Alexander Trallianus, though he seldom acknowledges the authorities from whom he derives his facts.

Suidas states that he wrote several medicinal works, but the principal one only has come down to us, and is commonly called "De Re Medica Libri Septem."

Paul has in the preface to this work given us a summary of each book.

In the first book he gives us some information on the complaints of pregnant women (B. I., c. i.), while in the third book we find that the diseases of women are dealt with from chapter lx. to chapter lxxvi. Again, in the sixth book chapters lxx.-lxxv. are devoted to some of the surgical operations performed on the female parts. Besides the work that has come down to us, Paul is said to have written a book on gynæcology; and Freind remarks that he appears to be the first instance of a professional man-midwife, and he draws attention to the fact that the first chapter in his extant work is on the complaints of pregnant women. He certainly was held in great respect by the Arabian midwives, as the following passage from Abul-Pharagius will show: "E medicis autem, qui hoc tempore floruerunt, fuit Paulus Ægineta medicus suo temporis celebris: insigniter autem peritus fuit in mulierum morbis, multumque illis curæ impendit. Convenire ipsum solebant obstetrices, et eum de rebus quæ

mulieribus post partum acciderent, consulere, quibus respondere dignabantur, et quid facerent iis de quibus quæsierant indicare; eum Ab-Kawabéli (obstetricium) appellarunt. Scripsit librum de medicina in novem distinctum tractatus, quem transtulit Honain Ebn Isaak; et librum de affectibus mulierum."[1] Whilst Paul's work "De Re Medica Libri Septem" is one of the most valuable compilations in ancient medicine that has come down to us, the passages which deal with the diseases of women tell us nothing but what can be found in his predecessors' works. Siebold, after dealing with Paul's contribution to midwifery, then refers to him as a writer on gynæcology, and bestows on him more praise than is warranted, for Siebold appears either to forget, or not to recognise, how absolutely Paul depends on Aetius, Archigenes, Soranus, and others, for his information; and consequently, while we praise Paul for selecting what is judicious, we are not in a position to say, as Siebold has, "that a glance at the chapters in which he treats the diseases of the uterus shows by the doctrines enunciated that the author had a large experience in gynæcology." Had we, indeed, not possessed the originals from which these passages have been compiled, this praise would have been meagre; but having the originals, we are compelled to place Paul in the rank of judicious compilers. Furthermore, he appears to have derived his material from Aetius rather than Soranus, inasmuch as he is generally content to give a very short account of the actual disease, then to relate a few causes, and finally to proceed to give long lists of receipts for the cure. The method resembles closely the one adopted by Aetius, while Soranus, a man truly versed in his work, gives a full definition, history, causes,

[1] Gregor., "Abul-Pharajio, arabic. edit. et latin. conversa ab Ed. Pocockio," Oxon., 1672, p. 114.

symptoms, and treatment, not merely lists of receipts. In fact, a careful study of many ancient works will show that those who were content to be merely compilers adopted the plan, seen often in the chapters of Paul and Aetius, of giving a short description of the disease, and then proceeding immediately to enumerate the drugs useful for its cure, neglecting entirely to trace its cause or to paint its symptoms.

Paul's most original work is to be found in the sixth book of his treatise, which deals with surgery. In his descriptions of operations we frequently find him differing from former writers, such as Hippocrates, Galen, and Leonides, and we often have much fuller details of the surgical treatment of cases than are to be found in the surgical works of Celsus. Among other chapters, he has given us that excellent one found in Aetius (XVI., lxxxv., lxxxvi.), who has taken it from Archigenes, "On Abscess of the Womb," also the one on imperforate pudendum from Aetius and Celsus, and the chapter on extirpation of the clitoris from Aetius.

We may sum up Paul's position in ancient times by quoting from Adams. "All the medical authors of the distinguished Arabian period quote his opinions in almost every page of their works, and never fail to recognise him as one of the most eminent of their Grecian masters."

Of the editions of his works that have been published, the best and most scholarly is that by Adams: "The Seven Books of Paulus Ægineta. Translated from the Greek, with a commentary embracing a complete view of the knowledge possessed by the Greeks, Romans, and Arabians on all subjects connected with medicine and surgery." This work, which is a masterpiece of learning, was published by the Sydenham Society in three volumes, London, 1844 to 1847. We shall use it throughout in quoting from Paul.

The Greek text has been twice published, Venet., 1528, and Basil, 1538, while there have been numerous Latin translations published at different periods.

*On Pessaries, from Antyllus.*—Pessaries are applied to the womb. There are three different kinds of them; for some are emollient, some astringent, and some are anastomotive; *i.e.*, they open the mouths of vessels. We use the emollient in inflammation of the womb, in ulceration and coldness of it, in ascension upwards, eversion and inflation thereof. They are prepared from Tuscan wax, the oil of privet and of lilies, the fat of geese and of fowls, unsalted butter, burnt resin, stags' marrow, and fenugreek and the like. The anastomotive, or those which open the mouths of vessels, are used when we wish to recall the menstrual purgation that has been stopped, or to correct the state of the womb when it is shut up or contracted. These are prepared from honey, mugwort, dittany, the juice of cabbage, liquorice, the juice of horehound, rue, scammony, or the like. The astringent are used in cases the reverse of those for which the anastomotive are applied; for they restrain the female discharge, contract the womb when it is open, and impel it upwards when prolapsed. The pessary is made of the thickness of bath sordes, and a little thicker; and then some wool, like a narrow tent, is to be doubled and dipped in the medicine, and applied to the mouth of the womb, having a long thread attached to it to draw down the pessary readily when it is thought proper (B. VII., c. xxiv.).

*On Trochischi, or Troches.*—Trochischi are so named from their form. There are three different kinds of them. For some of them are to be swallowed, some injected, and some rubbed in. Paul gives receipts for several to be used for the pudendum (VII. xii.).

*Anatomy.*—We have no description of the womb left us by Paul, nor any mention of the ovaries or Fallopian tubes.

*Cellulitis.*—Under the heading of "Abscess of the Uterus" (III. lxv.), Paul gives us an abridged account from Aetius (XVI. lxxxv.) of pelvic suppuration. Later on (VI., lxxiii.) he gives us the directions of Archigenes for operating in such cases (Aetius, XVI. lxxxvi.).

*Phimus in the Uterus.*—Phimus takes place about the mouth of the womb, either in consequence of ulceration or of inflammation terminating in scirrhus. Emollient hip-baths of oil and water, cataplasms, pessaries, vapour baths, fumigation with aromatics, are all recommended. The author says that phimus may be dissolved by a pessary of the sordes of unwashed wool, nitre, and turpentine resin, being simply an obstruction of the mouth of the womb (III. lxxiii.).

In dealing with cases of sterility, our author says that when the mouth of the uterus is shut up, it must be opened by injections of aromatics and by using fomentations. Fumigations of the womb may be applied either by sitting on a proper chair, and receiving the vapours which arise, or by injections of hot water in which sage, mugwort, rue, cumin, pennyroyal, sweet flag, and the aromatic seeds, have been boiled (III. lxxiv.).

*Imperforate Pudendum and Phimus.*—Paul gives (VI. lxxii.) the operation described by both Aetius (XVI. xcvi.) and Celsus (VII. xxviii.).

*Laceration of the Cervix.*—When the mouth of the womb gapes, the diet, fomentations, and medicines should be of a desiccant nature and astringent (III. lxxiv.).

*Ulceration of the Womb.*—Paul says that the uterus is often lacerated from difficult labour and other causes, and the ulcer may be detected by the dioptra, but if deep seated by the

discharges. He then gives a description of the discharges, which, he says, vary according to whether the ulcer is inflamed, foul, spreading, or clean (III. lxvi.).

His description is taken from Aetius (XVI. lxxxviii.), who acknowledges his indebtedness to Archigenes, Aspasia, and Asclepiades.

*Inflammation of the Uterus, and Change of its Position.*—Paul gives a very similar account to that of Aetius. He enumerates a number of causes and general symptoms, and then proceeds to the symptoms for inflammation of the posterior and anterior portions of the uterus, and lastly for the mouth of the womb. His treatment is by embrocations, cataplasms, hip-baths, and pessaries. He finishes the chapter with the following: "When there is derangement of the position of the uterus, it is to be treated like inflammation during the violence of the attack; but during the remission or decline emollients are to be applied, and when the complaint is protracted alteratives are to be used." Our author does not give here or elsewhere any description of the displacements of the uterus (III. lxiv.).

In the chapter on "Inflammation of the Womb" (III. lxx.), taken from Aetius, our author mentions that the midwife should introduce her finger, well oiled, into the womb, and gently extract, if possible, the thrombus lying in the womb by breaking it down (III. lxx.).

*Fibroid of the Uterus.*—Under the heading of "The Mole" (III. lxix.), Paul gives from Aetius a description of a fibroid tumour. He says: "The mole, too, is a scirrhous tumour, forming sometimes at the mouth and sometimes in the body of the womb, conveying to the touch the sensation of stone, and being attended with retraction of the parts above, and emaciation, paleness, loss of appetite, retention of the menses,

and swelling of the breasts, so as in certain cases to raise suspicions at first of a conception; but in process of time the true nature of the complaint is developed. Sometimes it raises suspicions of dropsy, from which it is to be distinguished by the hardness of the swelling, and from there being no sound of water when tapped by the fingers, as in case of dropsy. In certain cases, however, the disease actually terminates in dropsy, which for the most part proves incurable. In some cases it also brings on a discharge of blood." Our author recommends rest. He ends the chapter thus: "Some call by the name of mole an unorganized mass of flesh which forms on the coats of the womb, and is delivered like the fœtus."

In the previous chapter he deals with scirrhus and scleroma of the uterus in the same way as Aetius does (XVI. lxxxiv.).

*Cancer of the Uterus* (III. lxvii.). — Our author has borrowed from Aetius (XVI. xciv.), who is indebted to Archigenes.

*Prolapsus Uteri* (III., lxxii.).—Paul takes his account from Aetius (XVI. lxxvi.), who borrows from Soranus (lxvi.).

*Fissures, Condylomata, Hæmorrhoids, Thymi of the Uterus.*—The descriptions of these various diseases is taken from Aetius. Our author remarks on the operative treatment: "Such excrescences in women, when brought into view and exposed, are to be seized with a forceps and cut out with the point of a half-spatula; for the most distinguished surgeons do not approve of ligatures in these cases."

*Extirpation of the Nympha and Cauda Pudendi.*—Paul again borrows from Aetius (XVI. ciii.), but adds nothing new.

*Menstrual Discharge.*—The age at which the period begins is put down by our author as the fourteenth year; a few have it earlier, in the thirteenth or twelfth; and not a few are later

than the fourteenth year. The duration is two, three, seven, or in some cases twelve, days. They cease about the fiftieth year; a few have them till the sixtieth; while in some they begin to disappear about the thirty-fifth year, particularly with such who are fat. If the period does not come on, the sitz-bath is recommended.

There is a short chapter abstracted from Oribasius on "Emmenagogues" (I. xlvii.). It points out that decoctions of certain substances promote the flow, and that suppositories may do the same.

*Retention of the Menses.*—Paul points out that the menses may be suppressed from various causes, and if the discharge is suppressed owing to primary affection of the internal parts, then we must first direct our attention to the cure of the part originally affected, and afterwards think of the uterus. In discussing the treatment he speaks of a pessary of carded wool, rounded to the shape of the finger, and impregnated with the medicines (III. lxi.).

*On Immoderate Menstruation and Uterine Hæmorrhage.*—The account given here is very similar to that given by Aetius. Paul favours the application of a sponge, soaked in wine or liquid pitch, to the pudendum, but, as stated above, Aetius condemns this. An example of a pessary recommended by Paul may be given: Of fissile alum, of the inner part of galls, of the juice of acacia, of manna, of each 4 drachms; the yolks of four roasted eggs; these powders are rubbed with the juice of plantain and mixed. In using it the pessary of wool is impregnated with it, dipped into rose-oil, and applied.

Paul also recommends dry-cupping by large instruments applied frequently under the nipples to act by revulsion (III. lxii.).

We now propose to give a few observations from Paul on wounds of the peritoneum, and his description of gastrorrhaphy, in order that a comparison may be made between the method of closing the abdominal wound in these early times and the method adopted by us of the present day after performing an abdominal section:

B. VI. lii.: How wounds of the peritoneum are to be healed is next to be considered. If, then, the wound is small, so that the prolapsed intestine, being distended with air, cannot be returned to its place, it will be necessary either to evacuate the flatus or enlarge the wound. The former measure is the better, provided one can accomplish it. But how may this be most probably done? By removing the cause which occasions the inflation of the intestines. But what is this? Congelation of the surrounding air, so that the cure is to be performed by heating. Wherefore, having soaked a soft sponge in hot water, and then squeezed it out, foment the intestine therewith. In the meantime let hot austere wine be prepared, for it is more heating than water, and communicates strength to the intestines. If after having had recourse to all these things the intestines remain inflated, we must divide as much of the peritoneum as the prolapsed intestine requires. The straight instrument called the syringotoma, used for operating upon fistulæ, is very proper for this incision. A recumbent position of the patient is the best when the wound is in the lower part; and when in the right side he may be on the left, and when the left side he may be on the right, and this is common both to great and small wounds. But the replacement of the intestine into its proper place when the wound is large requires a skilful assistant. For he must take hold of the wound internally with his hands, and contract and com-

press it a little, so as to expose always a small portion to the sewer, and also must compress moderately what is sewed until the whole is sewed.

What is the most proper mode of performing the operation called gastrorrhaphy we must next explain. Since the abdomen must be united with the peritoneum, we have to begin by passing a needle through the skin from without inwards; but when it has transfixed the skin and the whole rectus muscle, passing by the adjacent peritoneum, we must push the needle from within through the other part of the peritoneum, and so hence from within outwards through the rest of the abdomen; and when it has passed out we must push the needle again from without inwards through the part of the abdomen, and passing by the adjacent portion of the peritoneum, and beginning again from the opposite side of this membrane, perforate it from within outwards, and at the same time all the other parts of the abdomen; then beginning again from this, sew it with the opposite membrane, and afterwards transmit it from the neighbouring skin outwards, and do this repeatedly until the whole wound be sewed up. The space between sutures required to keep the under parts together must be very small, but the interval between those required to keep the skin from falling asunder need not be so small. Excess in either respect must be avoided, and a medium chosen between the two extremes. And a medium is likewise to be observed as to the consistence of the thread; for that which is too hard hurts the soft skin, and what is too soft is first broken. In the same manner, passing the needle too near the lips of the wound occasions often a rupture of the remainder, which is too narrow. But if too much be taken, much of the skin remains ununited. These observations apply to the treatment of all ulcers, but are more especially

to be observed in gastrorrhaphy; and, as aforesaid, we must act, forming a conjecture as to the adhesion of the peritoneum with the abdomen, from the circumstance that the latter, being membraneous, seldom adheres; or, as some do, by bringing together the parts of the same kind—that is to say, peritoneum to peritoneum and abdomen to abdomen; or it may be done thus: In the same manner as above we must pass a needle from the side of the abdomen nearest us, from without inwards, and through it above; then, passing both lips of the peritoneum, one must again turn the needle from without inwards, through both lips of the peritoneum, and, again turning it from within outwards, pass it through the opposite part of the abdomen. This mode differs from the common and vulgar one, inasmuch as the needle is passed through the four lips at one perforation, and exactly conceals the peritoneum within the abdomen. In order that no vital part may be affected sympathetically, some tender wool is to be dipped in moderately hot oil, and the whole space between the groins and armpits wrapped in it. It will be better also to evacuate the bowels by a clyster of warm oil. But if any of the intestines be wounded, dark austere wine in a tepid state should be injected, more especially if it be perforated quite through.

The large intestines are easily cured, but the smaller ones with difficulty; and the jejunum is utterly incurable, from the multitude of its convolutions and the magnitude of its vessels, and owing to its coat being thin and nervous; besides, it receives all the bile in an undiluted state, and is nearest to the liver. The under and fleshy parts of the stomach we may attempt to cure, for we may succeed, not only because these parts are thicker, but because curative medicines are more readily applied to them, owing to the situation. The parts, however, about the mouth of the stomach and œso-

phagus are affected by the medicine only in passing down, and the exquisite sensibility of the mouth of the stomach is an obstacle to the cure of wounds of it. When from a rupture of the peritoneum the omentum is prolapsed, and either becomes livid or black, the part anterior to the black portion may be included in a ligature, for fear of hæmorrhage, and the part behind the ligature is to be cut off, and the extremities of the ligature allowed to hang from the under part of the sewed wound of the abdomen, in order that they may readily escape when cast off by suppuration of the wound.

# CHAPTER XIX.

## THE ARABIAN WRITERS.

Paulus Ægineta was the last of the eminent Greek authors on medicine; for although Constantinople was not conquered by the Turks until 1453, we nevertheless find no medical writer connected with that city worthy of mention after Paul's death, except perhaps Actuarius, who lived there as Court physician 1000 A.D., and in whose works we find a few references to the diseases of women.

Already during the latter years of Paul's life the cloud of war was rising in the East. Mahomet having inspired his followers with the ambition of conquest, we behold a people, hitherto fairly isolated from all other nations, suddenly issuing from their native land and capturing province after province. During the Caliphate of Omar II., the Arabs, led on by the victorious Amrou, captured Alexandria, and, after losing it for a short period, finally took possession of it, and in 646 not only expelled the professors from their seats of learning, but pillaged the city and burnt the great library of 700,000 volumes.

Though the greater number of the works were destroyed, yet the Arabians may have allowed some of the medical works to be rescued, for they, as Freind remarks (though Siebold thinks the conclusion is overstrained), were not more adverse

to good health than other nations, and so they may have allowed some of the chief medical works to be rescued, knowing that they were the guides which were to serve to teach their own physicians when these same works had been translated. Certainly it would appear that many works were conveyed to Greece and Italy, rescued from those destined to feed the fires of the city baths. In later days we find a somewhat similar instance of the preservation of works before and after the capture of Constantinople by the Turks, when the Greek medical writings were conveyed to Italy, and, after being translated into Latin, formed a valuable foundation for the revival of learning during the fifteenth century.

But even before the capture of Alexandria, Syriac translations of many of the Greek medical writers had been made at Alexandria, and after the city was captured these books became more disseminated among the Arabs, and later on were translated into Arabic (687 A.D.).

The Caliphs now became the patrons of learning, and Bagdad, founded by the Caliph Al Manzor (762), remained the imperial seat of his posterity during a reign of 500 years, and soon became one of the principal seats of learning in the East. Thither came those who saw in the luxury and progress of the new capital an opening where they might exercise their calling, and Gibbon tells us that in the city 800 physicians were licensed to exercise their lucrative profession. Here Honain, a physician of the Nestorian sect, with his disciples, became during the ninth century the chief of a school or manufacture of translations, and here many of the works of the classical authors were translated into the Arabic language.[1]

Those who would follow the future of gynæcology from the

[1] Gibbon, *loc. cit.*, c. lii.

death of Paul onwards must study the works written, compiled, and translated by the physicians who flourished at Bagdad in the East and Cordova in the West. We may say, however, at the outset, that the perusal of their works will not repay the trouble, because no new facts of importance were added to previous knowledge, since the Arabs were content to copy from the Greeks whatever related to gynæcology, because they could have but a very limited experience in this branch of medicine, inasmuch as the religious laws of the people forbade a man to examine the genital organs of a woman, in consequence of which gynæcology and obstetrics were left in the hands of women, who not only did the minor operations, but even performed embryotomy and lithotomy.

The Arabian authors whose works contain reference to gynæcology are the following:

*Serapion*, who was born in Syria, has left us two works in Syriac. He lived at the commencement of the ninth century.

*Rhazes* (882 A.D.) resided at Bagdad, and is famous for his work on small-pox.

*Ali Abbas*, also of Bagdad, lived during the latter part of the tenth century.

*Avicenna*, born 980 A.D., was a resident of Bagdad. He was the Galen of the East, and left a huge work entitled "The Canon," which was largely used by the Arabians during the twelfth century.

In Spain, where the Arabs had penetrated about the year 711, medicine was cultivated, and Cordova became the Bagdad of the West. Among the writers of Spain who have left us some passages on gynæcology are Avenzoar, of the thirteenth century; Averroes, born in 1126; and Albucasis, who lived at the end of the eleventh century (died 1106).

With the termination of the Moorish rule and the establishment of the Inquisition by Ferdinand, the pursuit of science in Spain was brought to an end, just, in fact, at that period when the new light of learning was beginning to illuminate Europe—a light which continued to increase in brightness and splendour from century to century, until we have come to bask in the splendour of its rays.

# *PART II.*

(Being a Résumé of Part I.)

## CHAPTER XX.

### RÉSUMÉ OF THE ANATOMY OF THE FEMALE GENITAL ORGANS.

#### Uterus.

We shall first note the various terms used by our authors for designating the womb.

Soranus (c. iii.) tells us that the womb was called *μήτρα*, *ὑστέρα*, and *δελφύς*: *μήτρα* because it is mother (*μήτηρ*) of the fœtus born from it, or because it makes those having it mothers; and, according to some, because it has a *measured* period (*μέτρον χρόνον*) for menstruation and bringing-forth; *ὑστέρα*[1] because it exhibits its functions late (*ὕστερον*), or because it occupies the lowest part of the female intestines; *δελφύς* because it brings forth brothers (*ἀδελφοί*).

Galen, in referring to the womb, frequently used the term *ὑστέραι*, because his conception of the womb had been derived from the bicornuate uterus of the lower animals; *μήτραι* was

[1] Liddell and Scott say that if *ὑστέρα* is from *ὕστερος*, the last or lowest part of the female intestines, it cannot be connected with the Latin *uterus*, which is probably akin to *ἔντερα*; but more probably it *is* akin to *uterus*, and not to *ὕστερος*. The Sanscrit term for uterus is *udara*.

used in a similar manner. Another form of δελφύς was ἡ δελφύα, and Rufus points out that δελφύς was a term used for the womb in one of the Hippocratic treatises (S., 222).

Celsus (IV. i.), in his short description of the womb, refers to it as "vulva";[1] thus, "Vulva autem in virginibus quidem admodum exigua est."

*Position and Size of the Uterus.*—Soranus describes the uterus from the dissection of a cadaver in the horizontal position, and says that it lies between the bladder and rectum, and rests on the latter, but beneath the former, either in whole or in part, according to change in its size. He remarks that in infants it is smaller than the bladder, but in virgins at puberty it reaches to the same height as the bladder, while in those more advanced in years and in married persons, especially multiparæ, it is even larger, so that it extends to where the colon stops. During pregnancy it is much larger, while after delivery it contracts, but still remains larger than before pregnancy. Rufus does not deal with either the position or the size of the uterus.

Aetius follows Galen, and the latter says that the uterus is placed within the peritoneum between the bladder and rectum, resting on almost the whole of the latter, and reaching far beyond the bladder towards the umbilicus: "qui parte fundus ipsius est." He says that the womb varies in size, being smaller in those who have not conceived, while it is much larger in those who are pregnant. Galen remarks that the cervix is eleven finger-breadths ($7\frac{7}{10}$ inches) from the vulva, while Soranus says that the os uteri is more distant from the labia in some than in others, according to the age, and that in adults the distance is generally from $3\frac{1}{2}$ to 4 inches.

[1] *Vulva* is probably derived from *volvo*, and may therefore be written *volva*, which signifies a wrapper or seed-covering. Others have derived it from *valva*, or *valvæ*, folding-doors, which is also derived from *volvo*.

Celsus says that the uterus in girls is small, but in women, except when they are pregnant, it is not much larger than a body that may be embraced by the hand (IV. i.).

It will be seen from the above passages that Soranus and Celsus had accurate notions concerning the size of the uterus, but that Galen and Aetius held the erroneous view that the unimpregnated uterus was so large that the fundus reached up close to the umbilicus. The writer of the Hippocratic treatise on the "Diseases of Women" (ii. 133) appears to have had an accurate idea of the length of the uterus, for he directs that in dilating the uterus the dilators are to be introduced for a distance of four finger-breadths (2·8 inches).

We may next inquire if our authors knew the normal position of the uterus. Soranus says that after delivery the uterus becomes contracted, but retains a larger size than before pregnancy. Under these circumstances it is larger than the bladder, and does not lie under it (the cadaver being in the horizontal position). Behind, the fundus of the uterus lies higher than the fundus of the bladder, being under the umbilicus, so that the cavity of the bladder lies upon the neck of the uterus, and its fundus upon the cavity of the latter.

The above description is fairly accurate, and it was most probably derived from the works of the Alexandrian anatomists, among whom was Herophilus, who had dissected the female organs of generation, as Galen expressly informs us ("De Uteri Dissect.," c. ix.). If, however, we take the descriptions of Galen and Aetius, we shall see that if these descriptions are meant to refer to the unimpregnated uterus, then they had no idea of the size, nor of the normal position of the fundus, of the unimpregnated womb, as both these writers state that the fundus reaches up to near the umbilicus.

Again, if we turn to our authors' descriptions of the various displacements of the uterus, we find that they were able to recognise a retroflexion of the uterus, and Aetius gives excellent directions for restoring the uterus to its proper position; while, on the other hand, we see that the bimanual examination could not have been practised to ascertain the normal position, else we should not have had such statements as Aretæus gives us, "that the uterus may be moved up in a direct line to below the cartilage of the thorax, and also obliquely to the right or to the left, either to the liver or spleen" ("Acute Diseases," II. xi.). Lastly, we are convinced that many of the displacements of the uterus that were described were guessed at from the position and direction of the cervix, not from the position of the fundus, though their constant use of the sound may have told them much. In conclusion, we may therefore say that, while the Alexandrian anatomists had probably accurately described the normal position of the uterus, among gynæcologists the position of the fundus was not always accurately ascertained, inasmuch as the bimanual examination was not practised, and the sound was not systematically used to ascertain the direction of the fundus of the uterus, many of the malpositions being guessed at merely from the position and direction of the cervix.

*Shape of the Uterus.*—Soranus says that the shape of the uterus is not convoluted, as in the brutes, but more like a cupping-glass (*σικύα* = a gourd). For, beginning from the rounded and broad end of the fundus, it contracts sensibly to the narrow mouth. The first, and projecting, part of it is called *στόμιον* (mouth = os uteri); next comes the *τράχηλος* (neck = cervix), then the *αὐχήν* (narrow neck = isthmus); these last two together form the *καυλός* (stem). Where it broadens out beyond the constriction of the neck, we have first the

ὦμοι (shoulders), then the πλευρά (ribs, sides), last of all the πυθμήν (fundus), beneath which is the βάσις (base).

Galen says that the form of the uterus, both considered as a whole and especially as regards the fundus (πυθμήν), is similar to that of the bladder; but it differs from that organ inasmuch as it has mammillary processes growing from either side. In another passage, however, Galen shows that he did not know the true shape of the human uterus, for he says: "But in women and other animals which have a womb similar to a woman's, such as the goat and cow," etc.

*Os Uteri.*—Rufus gives us similar terms to Soranus for the various parts of the uterus, and remarks that Hippocrates named the mouth of the womb ἀμφίδεον, from the resemblance to the circles of iron on the plough; while Soranus says that the size of the os uteri varies, and is in most cases normally as large as the outer end of the auditory meatus; while Galen remarks that it admits the sharpened point of a probe or something slightly thicker.

Soranus and Galen describe the cervix, the former mentioning that its texture is soft and fleshy in virgins, but in those who have borne it becomes more callous; both these authors quote Herophilus in likening the cervix in this condition to the end of the bronchus.

*Structure, Ligaments, and Blood-supply.*—Soranus says that the whole uterus is as far as possible fibrous (νευρώδης), but not composed of fibres alone, but also of veins, arteries, and flesh.

Galen gives an elaborate description of the tissues of the uterus, dividing them into an external and internal tunic, the latter being a double tunic and capable of being dissected into two layers.

Soranus and Galen both give excellent descriptions of the

ligaments of the uterus, and Soranus remarks that when these ligaments are shortened by inflammation the uterus is dragged on, and lies to one side.

Soranus describes the blood-supply to the ovaries and uterus as being derived from the renal artery on both sides, and he says that the ovarian veins open into the renal veins on each side (*vide* Kelly, "Operative Gynæcology," Fig. 27).

Galen, however, is more accurate in stating that the arteries in question come from the aorta, but he is inaccurate in saying that the ovarian veins open into the vena cava on either side. He alludes to vessels which correspond to those described by Soranus, for he says: "There are four other vessels which are not always in women, but which occur in some cases (according to Herophilus);[1] these spring from the vessels running to the kidneys, and enter the uterus."

*Fallopian Tubes and Ovaries.*—Soranus says that the ovaries (δίδυμος, double, twin, testicle, ovary) grow out from the sides near the isthmus, about opposite to the middle of the uterus. In shape they are, unlike the male organs, long and somewhat flat, and are round and broad at the base. The spermatic vessel from the uterus is carried out of each ovary, and, being placed along the sides of the uterus as far as the bladder, enters into the neck of the latter. Whence it appears that the seed of the female, inasmuch as it is poured out, does not play a part in the production of life. He further remarks that there are suspensory ligaments of the ovaries, for he had seen them in a case of operation for hernia, in which, during the operation, the ovary had prolapsed.

[1] The fact that Soranus studied in Alexandria, and quotes Herophilus with regard to the cervix being like the end of the bronchus; that he gives the blood-supply to the uterus as coming from vessels which are unusual, and which Galen shows were the discovery of Herophilus; and, lastly, the fact that the Fallopian tubes are not mentioned by Soranus, and were missed by Herophilus, are all evidences that Soranus used the work of Herophilus or of one of his followers in compiling his account of the uterus.

Galen gives an excellent description of the ovaries, and remarks on the coils of vessels that run to the ovaries. Galen then describes the Fallopian tubes. He says that the seminal tubes which run from the ovaries are seen to contain seed, in a similar way to the tubes in the male; these tubes, which are wide near the ovaries, and possess a cavity that can be seen, a little distance from the ovaries become narrowed, and appear as though they were hollow; while at the cornua, where they are joined into the uterus, they again become dilated. Neither Herophilus nor Euryphon nor Aristotle was aware of these connections.[1]

Rufus says that Herophilus was of the opinion that females had no varicose vessels (Fallopian tubes), but Rufus says that he himself had seen the uterus of a sheep, and from either side, springing from the testes (ovaries), there were (Fallopian) tubes which opened into the cavity of the uterus, and from these tubes mucous fluid escaped when they were pressed, so that it is a strong presumption that there are spermatic vessels of the varicose species.

Aetius says that the horns of the uterus first run upwards, then downwards, and become gradually narrower, so that the distant portions resemble veins. These narrowed portions of

[1] It is interesting to compare the descriptions that our authors have left us of the Fallopian tubes with the description of the tubes by Fallopius:

"That slender and narrow seminal duct rises, fibrous and pale, from the horn of the uterus itself; becomes, when it has gone a little bit away, appreciably broader, and curls like a branch (*capreolus*) until it comes near the end; then, losing the hornlike curl, and becoming very broad, has a distinct extremity which appears fibrous and fleshy through its red colour, and its end is torn and ragged like the fringe of well-worn garments, and it has a wide orifice, which lies always closed through the ends of the fringe falling together; and if these be carefully separated and opened out, they resemble the orifice of a brass trumpet. Wherefore, since the seminal duct from its beginning to its end has a likeness to the bent parts (*capreoli*) of this classic instrument, separate or attached, therefore it has been called by me the *uteri tuba*. These are present not only in the human body, but also in the sheep, cows, and all other animals which I have dissected" (Barbour, *loc. cit.*, p. 454).

the horns with sinuous curves reach to the ovaries, which are placed by the side of the uterus, and through these sinuous curves of the cornua the uterus draws the semen from the ovaries during coitus.

From the above descriptions, it is abundantly clear that Rufus, Galen, and Aetius were acquainted with Fallopian tubes, while Herophilus and Soranus did not know of their existence. Furthermore, these authors understood that these tubes were the means of communication between the ovaries and the uterus, and they considered the normal secretion of the Fallopian tubes the substance secreted by the ovaries; for Rufus says that when these tubes were pressed fluid escaped, so that it was a strong presumption that they were spermatic vessels of the same kind as the vas deferens in the male; and Galen, in his work on the Sperm, says that the Fallopian tubes can be observed to be filled with sperm (*μεστὸν δε φάινεται σπέρματος*), and in another place ("De Usu Partium," XIV. xi.) he remarks that there exists a great resemblance between the sperm of the testicles of the female and the fluid contained in the glandular bodies (prostate) of the male. In short, these writers supposed that the mucus of the Fallopian tubes was the secretion from the ovaries. How could they by any possible means guess at a truth which De Graaf, Hoorne, Swammerdam and Malpighi failed to ascertain, and which only became a possible discovery when the microscope had been brought to sufficient perfection to enable Baer (1836) to clear up the mystery by discovering the ovum?

*Round Ligaments.*—Both Rufus and Galen mention the round ligaments, the latter supposing that they poured into the uterus a fluid analogous to the prostatic fluid of the male.[1]

[1] Daremberg, "Œuvres de Galien," tom. ii., p. 118.

### Vagina and External Genitals.

Soranus says that the female pudenda (*τὸ γυναικεῖον αἰδοῖον*) are also called *κόλπος γυναικεῖος*, by which term he means to designate the vagina, the wall of which he says is fibrous and rounded, like intestine, and more roomy at the inner, and narrower at the outer, end. It is attached internally to the cervix uteri, externally to the labia. He says that the length of the vagina in the adult is 4 inches, and he gives many reasons to prove that no thin partition membrane exists which barricades the vagina, "by which he appears to combat some view that the hymen was always imperforate" (Barbour).

Soranus then remarks that the parts outside are called *πτερυγώματα* (wings = labia majora), forming as it were the lips of the vagina, and that these end above in the *νύμφη* (clitoris), and that below the clitoris there is a fleshy prominence called the urethra, while the rough fold is the *χείλος* (lip = labium minus).

Galen refers to the vagina as the *γυναικεῖος κόλπος* ("De Uteri Dissect.," c. vii.). In another passage he says that *τὸ αἰδοῖον τὸ γυναικεῖον* is the open space lying between the pubic bones, and has a cuticular process externally, analogous to the prepuce of males. This description appears to apply to the vagina, for in several passages in another of his works ("De Usu Partium," Lib. XIV.) the same terms are used to express the vagina, thus: *ὁ γὰρ τοι τῶν ὑστερῶν αὐχὴν . . . ἐς τὸ γυναικεῖον αἰδοῖον τελευτᾷ* (XIV. iii.).

Rufus says that the cavity leading up to the cervix is the *γυναικεῖος κόλπος*, while the parts that can be seen from the outside are embraced by the term *αἰδοῖον*. He calls the clitoris the *νύμφη* (the myrtleberry), and the cleft in the

mid-line of the genitals he calls the σχίσμα, while the mons veneris is the κτείς, or comb. What Soranus called πτερυγώματα (labia majora) he explains were less commonly called μυρτόχειλα.

Celsus in his description of the female parts alludes to the vagina as the canal: "quem canalem vocant" (IV. i.).

Among the Egyptians a distinction was drawn between the uterus, the vagina, and the external genitals, for we have three distinct words used in the Papyrus Ebers to express those different parts. Thus, on p. 170 the uterus is evidently alluded to, as prolapse of the womb is referred to, and the term "met-ret" is used. On p. 174 the vagina is referred to, and the term "sed" is used; while in other passages the general term "at" is used, and is translated by Joachim by the word "vulva," which may be taken in a broad sense to mean uterus, vagina, or the external organs of generation, or merely the latter, as the term usually signifies nowadays.[1]

[1] Besides the terms used by our authors, we find many other words in use by classical writers to denote the uterus, vagina and vulva.

*A. Terms which signify "Womb."*

*Alvus:* "Cum prægnans Dionysium alvo contineret" (Cicero, "De Div.," I. xx.). This word is probably connected with *vulva* and the Sanscrit *ulva*, a cavity or womb.

*Arvum:* "Muliebria arva" (Lucret., IV. 1101); "genitale arvum" (Virgil).

*Bulga:* Lucilius, Sat., Lib. VI. (B.C. 103).

*Fovea:* Tertullianus.

*Loci, Loca:* "Cum in locis semen insederit" (Cicero, "De Nat. Deorum," II. li.); also in Celsus, II. viii.: "Quæ locis laborat, aut difficulter partum edit, sternutamento levatur."

*Matrix:* "Matricis dolor" (Vegetius, "De Re Veterinaria").

*Uter:* Cæcilius Statius (B.C. 168).

*Uterus:* Plautus, "Truculentus," I. ii. 97.

*Utriculus:* Plinius Secundus, Hist. Nat., XI. xxxvii. 84.

*Venter:* "Homines in ventre necandos conducit" (Juvenal, VI. 595-6).

Ἐπομφάλιον: This word signifies the boss of a shield, but it is used by Parthenius (B.C. 63) to denote the womb.

Γαστήρ, νηδύς: Both these words signify the belly, and are used by Homer to denote the womb.

In the Jewish Talmud the uterus is called the sleeping-chamber; the cervix uteri the porch; the seed-vessels the storeroom; the vagina the outer house; the hymen the virginity; the labia majora the hinges; the labia minora the doors; the clitoris the key.

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Γονή: That which is begotten. Hippocrates, however, used the word to signify the womb, according to Rufus.

Κόλπος: This word denotes the bosom, waist, and womb. Soranus says that the whole receptacle of the womb is called the κύτος (*cavum*), γάστρα (*venter*), and κόλπος (*sinus*). Galen also, in speaking of the bicornuate uterus, says that each horn is called by Praxagoras and Philotimus the κόλπος, and hence the womb of woman is δίκολπος (*bisinuatus*). Later on, in describing the vagina, Soranus calls it κόλπος, and nowadays we derive such words as "colpitis" and "colporrhaphy" from κόλπος, meaning thereby disease of, or operations on, the vagina and not the uterus.

Στομαχος: Galen uses this term to express the mouth of the womb. The term "womb" itself is from the Anglo-Saxon *wamb*, the belly or womb.

*B. Terms that signify "Vagina."*

*Cunnus:* "Inter se geminos audes committere cunnos" (Martial, I. 91).

*Vagina:* This word does not occur in Celsus, who used the term *canalis* for the front passage. It appears to have been applied to the front passage, if we may judge from a line in the "Pseudolus" of Plautus, Act IV. vii.

*Concha:* Plautus, "Rudens," Act. III. iii.

*Sinus:* "Tangitur et tacto concipit illa sinu" (Ovid).

*Tubus:* Martial, XI. lxii. 6.

*C. Terms that signify "Vulva."*

*Crista:* Juvenal, VI. 421.

*Sulcus:* Virgil, "Georgic.," III. 136.

*Muliebria:* All the organs of generation (Tacitus, "Annales," XIV. lx.).

*Navis* and *Saltus* are applied by Plautus to the pudendum.

*Hortulus cupidinis.*

*Porcus:* Varro, "De Re Rustica," II. iv. 10.

*Pudendum:* The part about which one should be ashamed.

*Specus:* Auctor Priapeiorum.

Ἀμφίκανστις: Eustathius.

Ἐσχάρα: Eustathius.

Κύσθος, Κυσός: Aristophanes.

Χοίρος: Aristophanes.

Πλιχάδες: Perineum (Rufus).

Κῆπος: Organs of generation, but according to Diogenes Laertius equals pubes.

Δέλτα: Groin or pudenda.

# CHAPTER XXI.

## RÉSUMÉ OF PHYSICAL EXAMINATIONS OF THE PELVIC ORGANS.

### Inspection, Palpation, and Percussion.

These methods of examination were commonly used by the ancients. Hippocrates, Soranus, and Aetius refer to them in many places in dealing with gynæcological cases; thus, the latter points out how the mola (myoma uteri?) may be differentiated from ascites and pregnancy by palpation and percussion (c. lxxx.). The liver and spleen are described as being palpated in one of the Hippocratic works.

### Vaginal Examinations.

These examinations were made by the medical men,[1] the specialists in gynæcology, by the midwife, by female practitioners, and by the patient herself. The examination was made either with the finger or the speculum. In the Ebers Papyrus we have the first mention of vaginal examinations in dealing with obstruction for disease on one side of the cervix, and in the treatment of prolapsus uteri. Soranus mentions the specialists in gynæcology who were called in by the midwives in difficult cases: "Dicimus quosdam esse mulierum medicos, quia affectiones mulierum sanant; et homines solent

[1] Vaginal examinations are frequently mentioned in the Talmud, and were made by the Rabbins.

obstetrices ad morbos vocare, quando mulieres proprium quid patiuntur et quod illis cum viris haud commune sit" (c. xlvii.). These men no doubt performed the more difficult operations, for it was not until the Arabian period that men ceased to examine and operate on the female genital parts. The midwives frequently examined the vagina and cervix, as we see from many passages in Hippocrates (N. O. W., 40[1]), and Soranus specially mentions that the index-finger of the left hand was used, and that the nail was to be evenly pared (c. xxi.), so as not to lacerate the organs (c. i.). The medicæ, or female practitioners, no doubt made examinations, for in the "Hippolytus" the Nurse tells Phædra that if her disorder is one that cannot be revealed to men, then there are women who understand such matters. Lastly, there are numerous passages in Hippocrates that show that the patient was accustomed to examine her os and cervix (D. O. W., ii. 133), while passages in Soranus show us that females were accustomed to smear substances on their own cervices to prevent conception (c. xvii.).

The bimanual examination does not seem to have been used for diagnostic purposes; it was, however, used in cases of stone in the bladder (Aetius, c. xcix.), when two fingers of the left hand were introduced into the vagina and the right hand compressed the bladder from above. It was also used in case of calculus of the uterus, two fingers of one hand being passed into the rectum, while the other hand was employed to press from above (Aetius, c. xcviii.).

[1] D. O. W. = "Diseases of Women"; S. = "Sterility"; N. O. W. = "On the Female Nature."

### Rectal Examination.

This was resorted to, as shown by Soranus (c. lx.), in the differential diagnosis of inflammation of the rectum from peri-uterine inflammation; while Aetius directs, in a case of retroflexion of the uterus, that the midwife should introduce her finger into the rectum and push the uterus forward (c. lxxvii.).

The rectal speculum was used by the Hindus, and Hippocrates ("Fistulæ," c. iii.) refers to it in dealing with cases of rectal disease; while the rectal bougie was also used by the Hindus to dilate the rectum in cases of stricture (Wise, "Hindu System of Medicine," p. 387).

Galen in his "Linguarum Explanatio," in defining *κατοπτήρ*, says that it was the instrument for dilating the seat.

### Position of the Patient.

Aetius, in a passage from Archigenes, thus describes the position of the patient during an examination with the speculum: The woman is placed supine on a seat, with her legs drawn up on her abdomen, and her thighs separated from one another. Let her arms also be brought down under her legs, and secured by proper ligatures passing over her neck. The patient being placed before a clear light, the operator sits on her right side, and he is then to make an examination with a speculum proportionate to her age. The depth of the vagina is to be measured with a sound, lest the stalk of the speculum be too long, and so the uterus would be pressed against it. And if it is found that the stalk of the speculum is longer than the vagina, folded compresses should be placed on the labia or sides of the pudendum, so that the speculum may be placed firmly on them. The stem should be intro-

duced having the screw at the upper part, and the speculum is to be held by the surgeon; but the screw is to be turned by the assistant, so that the blades of the stem being separated the vagina may be distended (c. lxxxvi.).

This passage shows the antiquity of the "lithotomy position" in gynæcology; this position, however, was used by the Hindus in rectal operations, showing still further its antiquity (Wise, p. 386).

During treatment the patient was sometimes placed on her back, with her feet elevated and her thighs separated (D. O. W., 144), or crossed, the one over the other (Soranus, c. xlix.). In other cases she lay on her side; thus, in treating a case of displacement of the uterus, soon after labour, "the woman will lie on the hip opposite to the displacement" (Aetius, c. lxxvii.; N. O. W., 25). In other cases the foot of the bed was raised (D. O. W., 149; Soranus, c. xlix.), or the buttocks were raised (Aetius, c. lxxvi.); while in case of prolapse the body of the patient was fixed to a ladder, and she was then placed head downwards, so that succussion could be practised (N. O. W., 5); Soranus did not, however, approve of this position. In some cases of dystocia the patient was placed on her knees (Soranus, lxiv.); while Soranus, in dealing with a case which he supposes to be (peri-)uterine inflammation, but which was more probably a prolapsed ovary, says that the tumour may be felt by a rectal examination, but that it will alter its position if the patient be placed in the knee-elbow position (c. lx.). Aetius also alludes to the knee-elbow position in dealing with retroflexion of the uterus, for he says that the fæces are not passed, nor can a clyster be administered: "nisi genibus innitatur ægra" (c. lxxvii.).

Rufus, in dealing with diseases of the bladder, also alludes to this position ("Diseases of Kidneys and Bladder," c. xi.).

In the after-treatment of imperforate vagina, the patient was kept on her back, and a pillow was placed between her legs (Aetius, c. xcvi.). Oribasius alludes to the position to be occupied by a patient in having a clyster administered ("Collecta," B. VIII. xxxvii., xxxviii.).

Of the positions enumerated above, the inverted one mentioned by Hippocrates and Soranus, in the treatment of prolapsus uteri, has more than a passing interest, when we see in it the first dawning of the Trendelenburg position, so much in use among gynæcologists of the present day. Hippocrates in his work on "Articulations" has given us a full and minute description of the above position. He says that leather cushions are first placed on a ladder and secured there, and the patient is then placed on the cushions and secured by cords passing round the ankles and above and below the knees and at the nates; the arms are fastened along the sides of the body. After this the ladder is hoisted up to the gable end of a house, and succussion practised (c. xliii.).[1]

This inverted position was used by Ambrose Paré in reducing some forms of herniæ; while Jean Scultet in his work "L'Arcenal de Chirurgie" (1675) used the position in operating on herniæ, and gives figures of the patient lying on a board head downwards. He says: "Premièrement, après avoir imploré le secours du Ciel, le patient, suffisamment échauffé dans le bain, sera placé à la renverse sur une lingue ais, couverte d'un linge en quatre doubles, et fermement appuyé sur la table et sur un banc en sorte que les pieds soient en haut et la teste en bas."[2]

[1] Adams, in his edition of the "Genuine Works of Hippocrates," gives a plate from Vidus Vidius showing this apparatus for succussion.

[2] Desposses, "La position décline." *Revue de Gynécologie* (Pozzi), T. III. iv. 737.

## Therapeutic Agents.

### *Instruments used in Examination and Operations.*

*Speculum.*—Wise, in his descriptions of the surgical instruments used by the Hindus, says that "Naru-juntra consist of twenty varieties of tubular instruments, of different sizes and shape, according to their intended use, including cannulæ, catheters, syringes, etc. They are used for removing extraneous substances from deep-seated canals, as the intestines, urethra, etc.; for examining deep-seated parts; for the application of other instruments," etc. (Wise, p. 168).

Soranus says that in case of hæmorrhage from the vulva we can distinguish the place from which the blood is proceeding more accurately by using the speculum (c. xlix.). Soranus wrote about 100 A.D., but we know that the rectal speculum was in use before this time, as Hippocrates mentions it in treating of fistula in ano, for he says: "And having examined the ulcerated part of the rectum with a speculum," etc. (c. iii.). The vaginal speculum was also in use, for in the ruins of Pompeii[1] a speculum with two branches and a travelling yoke for them driven by a screw has been discovered, and one with four blades has quite recently been unearthed.

Galen in his "Linguarum Explanatio" says, in referring to *κατωπτήρ*,[2] that it was the instrument to dilate the seat, while *διώπτρα*[3] was the instrument by which he dilated and viewed the female genitals. Aetius gives us the best description of the manner in which the speculum was introduced, taking his account from Archigenes; this we have already given above (*vide* "Position of the Patient"). Paul also mentions the speculum, but after this writer's time the speculum was but

[1] Destroyed 79 A.D. [2] *κατοπτήρ*; *καταπτήρ*. [3] *διόπτρα*.

little used, for during the Arabian period men were not allowed to examine the female parts.

The speculum, however, was not forgotten in the Middle Ages, and Franco (1586), Paré (1592), and Scultet (1666), each described the speculum. On p. 788 of Vol. II. of the "Œuvres d'Ambroise Paré," edited by Malgaigne, we find a three-bladed speculum figured, and the text says: "On pourra mettre le speculum matricis, à fin de voir plus aisément." Astruc in 1761, in describing a vaginal examination, says that the finger may be used, but if that is not sufficient a speculum uteri may be used. In the eighth edition of Heister's "Surgery," published in 1768, we find the bivalve speculum figured, and the description to the plate says: "Fig. 15 is a speculum ani, or instrument to dilate and inspect the anus and vagina in disorders of these parts." In short, as Thomas[1] has said, "it was described by successive writers up to the nineteenth century in language as distinct as words could make it, and yet not only they who read, but they who wrote it, did not comprehend its meaning or appreciate its significance."

It remained for Récamier to regenerate this instrument, and he first used it in 1801; but it was not till 1818 that he brought it before the profession and pointed out its true significance as an instrument for the gynæcologist. His recent biographer[2] says: "Les spéculums usités parmi les chirurgiens, jusqu'à Récamier, n'ont réellement aucun rapport avec l'instrument qu'il a imaginé.

"Récamier se servit d'abord d'un tube d'étain, à parois réfléchissantes, dont il augmenta peu à peu le calibre et modifia progressivement la forme.

[1] Thomas, "Diseases of Women," p. 24.

[2] "Récamier et ses Contemporains," Paul Thiaire, Paris, 1899, p. 145.

" Ce fut, au début, une simple canule du volume d'un doigt et de quatre à cinq ponces de long, à travers laquelle il pratiquait des pansements sur le col utérin, et sur les parois vaginales (1801). Peu à peu, il augmenta son calibre, disposa, en bec de flûte, l'extrémité utérine, évasa son extrémité externe en forme d'entonnoir (1818). . . . Il le brisa alors et adopta deux demi-cylindres destinés à s'écarter et à agrandir considérablement le champ de l'investigation."

Chrobak[1] sums up the various kinds of specula thus: The old speculum of Segalas constitutes the link between the tubular and the many-bladed instrument, since it consisted of two halves of a cylinder united by a transverse bar. The oldest specula were multibladed. The speculum of Paulus of Ægina consisted of two blades; those of Albucasis, Paré, Scultetus, and that from Pompeii, of three blades; later Scultetus, Heister, Lisfranc, Jobert, Ricord, Boivin, Récamier, devised two-bladed; Paracelsus, Mauriceau, Busch, Hatin, Weiss, Charrière, three-bladed; Charrière, Segalas, Riques, Scanzoni, four-bladed; Beaumont a five-bladed, and Magonty a six-bladed."

*Sound.*—The sounds mentioned by our authors in use for gynæcological cases were made of wood or metal.

Hippocrates directs the patient to use a sound of lead to open the uterine orifice before a fumigation was administered (D. O. W., i. 11). The leaden sound is also mentioned by him as being used to straighten or rectify a displaced uterus, and pine-wood sounds were used for the same purpose. Aetius in a case of retroflexion says that the midwife with her sound, which is directed by her finger, should straighten the neck of the womb (c. lxxvii.).

[1] Chrobak, "Die Untersuchung der weiblichen Genitatien und allgemeine gynäkologische Therapie."

The sound was also used to measure the length of the vagina: "per specillum sinus muliebris profunditatem demetiatur" (Aetius, c. lxxxvi.). It served as a guide when operating on imperforate vagina, being introduced into the canal as a precaution (Aetius, c. xcvi.); and Soranus, Aetius and Oribasius each describes its use for plugging the uterus in cases of menorrhagia.

With regard to the uterine sound, there has been much discussion as to how much credit Sir James Simpson should have accorded to him, in connection with the instrument which universally bears his name.

Simpson was an authority on antiquities, and he was fully alive to what had been written by his predecessors on the subject of the sound, and he accordingly maintained that, while the introduction of a probe or sound into the os and cavity of the uterus was mentioned in the Hippocratic writings, and also in Avicenna and in some Arabian authors, a uterine probe or bougie is alluded to, and Hilken, Cooke, and other writers in the sixteenth and seventeenth centuries had spoken of it; yet, nevertheless, all those authors had implied that the sound had been introduced into the cervix of the uterus more as a means of treatment—and particularly for the mechanical dilatation of a contracted or strictured os—than as a means of physical diagnosis.[1]

Simpson, in fact, was led to introduce the uterine sound because he considered that the physical examination, as hitherto practised, seldom enabled us to ascertain accurately the organic condition of more than the cervix and lower part of the body of the uterus. "To meet these difficulties in uterine diagnosis, I have for some time past been in the habit

[1] Simpson, "Obstetric Memoirs and Contributions," Priestly and Storer, vol. i., p. 93.

of using a metallic uterine sound or bougie of nearly the size and shape of a small male catheter, which, when introduced, as it can easily be done, into the interior of the uterus, and manipulated there in different ways, has proved to me of great service in rendering the diagnosis of the diseases in question, and more particularly those of the fundus, body, and cavity of the organs, parts usually considered beyond the reach of examination, much more accurate and precise than can be effected by any other means with which I am acquainted."[1]

That the sound had been used for the exploration and measurement of the uterus by others before the days of Simpson he did not attempt to deny, for it was well ascertained that Wierus in 1637 had used a sound for exploring the uterus, and the authors that Simpson quotes in his memoir, viz., Hilken and Cooke, had both referred to the sound of Wierus. Furthermore, in 1771 it was employed by Levret for measuring the length of the uterus in hypertrophy of the cervix, and subsequently as an aid in diagnosis by Chambon, Vigoroux, and Desormoux.[2]

The result of the examination of the many passages in our authors' works, in which the use of the sound is mentioned, compels us to agree with Simpson's contention that the ancients used the sound to rectify the uterus, ascertain the patency of the cervix, or to measure the vagina; but they cannot be said to have used it to accurately ascertain the length of the uterus in different affections, nor to have used it, except in some very simple cases, to aid them in their diagnosis.

It may now be permitted to us to inquire if the sounds used by the ancients bore any resemblance to the sounds used by

[1] Simpson, *loc. cit.*, p. 43. [2] Thomas, *loc. cit.*, p. 24.

us in the present day. The Greek word μήλη is usually translated by the Latin equivalent *specillum* (derived from *specio*, to look at), and is reputed by Cicero to have been invented by the Arcadian Apollo. After examining the various passages in many authors, one is led to the conclusion that μήλη and *specillum* were terms applied to a considerable variety of instruments, ranging from sharp-pointed probes to flat bistoury-like instruments used for cutting purposes. We shall now quote various passages to bear out this contention.

Galen, "De Dissectione Uteri," c. vii.: In speaking of the size of the os uteri, Galen says at times it will admit a sharpened specillum: "Qui quum reliquo toto tempore specilli (μήλης) acuminatum capitulum vel paulo crassius aliquid admittat."

Celsus, V. xxviii. 5: Here we see its use as an exploring probe: "Ante omnia autem demitti specillum in fistulam convenit, ut quo tendat, et quam alte perveniat, scire possimus."

VII. iv. 4: Here as a guide: "In has demisso specillo ad ultimum ejus caput incidi cutis debet."

Soranus, c. xlix.: Here we see the specillum used for plugging the uterus with wool in case of hæmorrhage: *διὰ δακτύλου, ἢ μήλης παρεντιθέμενον τῷ στόματι τῆς ὑστέρας.*

Aetius, c. lxxvi.: The use of the uterine specillum in correcting malposition of the uterus is shown here: "Si vero in obliquam retractio inclinat . . . obstetrix specillo cum digito subimmisso, uteri collum dirigat."

C. lxxvi.: Here we see it used as a measure for the vagina: "Per specillum sinus muliebris profunditatem dimetiatur."

C. xcvi.: This passage shows the specillum in use as a flat knife: "Atque ita infra signatum per stylum locum

dissecabimus per specillum latum." Galen ("Linguarum Explanatio") says, in reference to μηλὴ πλατέιη, a flat specillum similar to a σπάθη (spatula).

Galen, "De Semine," II. i.: Mention is made of the "specilla ad formam spathæ facta."

Aetius, c. lxxxvii.: This passage shows that the specillum, though it might serve as a knife, was not the same as a scalpel: "At si sanguis eruptionis tumor est, pro specillo sive scalpello, cauterium eminentiori loco adhibebimus et ita pus educemus."

Celsus, V. xxviii. 3: Here we see the specillum used for applying remedies to affected parts: "Quidquid autem inspergitur averso specillo infundi debet." The "averso" would probably refer to the back of the specillum.

VI. vii. 5: Here we have mention of a special specillum for the ear: "Ubi vero vermes orti sunt, si juxta sunt, protrahendi oriculario specillo sunt." Mention is also made of a specillum for operations on the eyes, "asperato specillo" (Celsus, VI. vi. 27); and Pliny (VII. liv.) relates a tragic instance in connection with the use of the specillum in an eye case, for, in giving instances of sudden death, he says: "What is more singular than all, C. Julius the physician, while he was applying with his specillum some ointment to the eye of a patient, fell dead."

Paul, VI. 78. Here we have mention of a double-headed specillum, for in treating of fistula in ano Paul says that "Hippocrates directs us to pass a raw thread consisting of fine pieces through the fistula by means of a probe having a perforation, or a double-headed specillum."

The above quotations will show that the term "specillum" was applied to a great variety of instruments, and this conclusion is supported when we examine the catalogue of the

instruments found at Pompeii,[1] in which we find seven varieties of the specillum figured, with obtuse, spoon-shaped, flat and oval, flat and square, and flat and divided, ends.

In concluding, we may give from Adams (Paul, Vol. II., p. 273) the following account, from Fabricius, of the specillum: "Il nous suffit sçauvoir que *specillum* (qui est le mot latin de Celse) est un instrument long et rond, de cuivre, d'argent, ou de plomb, auquel on sonde les fistules, ayant un de ses bouts plus large, et l'autre plus étroit, en vulgaire Italien *stilo*" ("Œuv. Chir.," II.).

Later on Adams gives Harduin's account of the specillum: "Quid sit specillum Varro explicat (Lib. V., 'De Lingua Lat.'): *Quo oculos inunguimus quibus specimus* (hoc est, aspicimus), specillum est. Graecis μηλὴ dicitur. Aetius, Serm. viii. 14: *Cum specillo instrumento, quod melam Græci appellant.* Instrumentum parvum ac teres, quo utuntur ad vulnerum aut fistularum viam aut profunditatem pernoscendam. Une sonde de chirurgien." If the κοπάριον, however, was the same as the μήλη or the specillum, it was evidently used for cutting with as for cutting upon (Adams, Paul, Vol. II., p. 402).

*Uterine and Vaginal Dilators.*—Dilators made of wood, lead, and tin are mentioned by Hippocrates (D. O. W., ii. 133; S., 217).

The method adopted in dilating the cervix by the author of the Hippocratic treatise in the "Diseases of Women" was briefly as follows: The patient first received fumigations for five or six days, until the cervix was thought to be in a suitable condition. After the fumigations, dilators (τῶν προσθετῶν) made of pieces of very greasy pine-wood were introduced into

[1] Vulpes, "Illustrazione di tulli gli Strumenti chirurgici scavali in Ercolano e in Pompei," Napoli, 1847.

the cervix. There were six of these, and each was six finger-breadths in length; they ended in a point, and each succeeding rod was a little longer than the preceding one, the largest being the size of the index-finger and of the shape of a finger, being smaller at one extremity than at the other. Before being introduced they were smeared with oil. At first the point was introduced gradually by turning the dilator round and pushing it at the same time, the rod being introduced for a distance of four finger-breadths (2·8 inches). After the first rod had been introduced it had to be withdrawn and replaced by a larger one. During the after-treatment a leaden pipe filled with mutton-fat was kept in the uterus during the night-time, while in the day-time one of the pine rods was used.

None of our other authors allude to this method of dilating the uterus, although Soranus says that if the cervix is too small it must be dilated, but he does not give the method to be adopted. He refers to the finger as a dilator in obstetrical cases (cc. xvi., xxi.).

Aetius, quoting Archigenes, gives us an excellent account of the use of sponge tents in dilating the cervix. He says: "When we find that the parts are soft to the touch we should introduce pieces of dried sponge, to which are attached pieces of thread, in order that they may dilate the narrow portion of the canal; and if they should slip out, then we should place larger ones in, and for this reason it behoves us to have several different sizes ready" (c. xcv.). Pliny (XXXI. xlvii.) says the softest kind of sponges are those employed for tents (*penicilli*).

Hippocrates describes another method for gradual dilatation of the cervix by means of tents made of raw flax. There were three of these tents—the first small, the second larger,

and the third as large as the little finger, and the length was four finger-breadths. They were rubbed with goose-grease, and introduced after an aromatic fumigation had been administered, and were used in cases of induration of the cervix and stenosis of the os (D. O. W., ii. 157).

With regard to uterine dilatation by means of instruments whose blades are separated after introduction (and which were first recommended by Busch, in modern times, for obstetrical purposes), we find no mention of such in our author's works; and it is not, in fact, until we come to the works of Albucasius, of the twelfth century, that we find these instruments described as being used for dilating the cervix in obstetrical cases.[1] In some vaginal operations rolls of lint (Aetius, c. xcvi.), or a tube of tin, was used to keep up the dilatation of the passage after a plastic operation for imperforate vagina; and the same end was achieved by the frequent introduction of the speculum.

We see from the above descriptions of uterine and vaginal dilatation that the ancients were familiar with the two methods most frequently employed by ourselves, viz., the rapid dilatation by means of graduated bougies, and the slower dilatation by means of tents. Thus, the steel sounds of Macintosh and Peaslee were represented among the ancients by their leaden sounds, while the graduated bougies of Hegar bear an extraordinary resemblance to the graduated conical pine rods of Hippocrates. Their sponge tents with string attached differed in no respect from those of Simpson, while the flax balls may be said to have been the forerunners of Vulliet's slower method of dilating by means of gauze.

Sir James Simpson is generally credited with the first

[1] A figure of the vertigo Albucasis, with which the womb was dilated, will be found on p. 208 of Professor Glaister's Life of Smellie (1894).

introduction of sponge tents for gynæcological purposes, but in the light of the above passages from Aetius and Archigenes Simpson's claim must be reduced to the *reintroduction* "of a means of safely opening up the cavity of the cervix and body of the uterus, to such an extent as might enable us to introduce a finger into the uterine cavity, for the purpose of diagnosis and operation,"[1] the *means* being the placing of sponge tents in the os and cavity of the uterus.

Simpson was fully aware that sponge tents had been used before his day for dilating the cervix, for he quotes from the work of Henry Van Roonhuyse (1672), who wrote that "in some women this neck (of the womb) is so hardened, tapering out, and sunk down . . . that he was forced to enlarge it by means of the radix gentiana, medulla sambuci, or even by a prepared and dried sponge, having been first moistened in melted white wax, and squeezed in a press to make of it convenient pessaries, according to the exigency of the case, by which the neck of the womb can be disclosed and widened."[2] This description was afterwards copied without acknowledgment by an English writer named Cook, and published in a work called "The Marrow of Chirurgery."

Before Henry Van Roonhuyse published his work,[3] Roderic de Castro, of Portugal, published a work,[4] in which he advocated the dilatation of the cervical cavity by expansile substances, such as the roots of gentian, aristolochia, bryonia, and cyclamen.

Dilatation by means of straight metallic sounds of different degrees of thickness was introduced in the first quarter of this century by Macintosh, a teacher in Edinburgh, for the treat-

[1] Simpson, *loc. cit.*, vol. i., p. 125.
[2] Simpson, "Clinical Lectures on the Diseases of Women," 1872, p. 247.
[3] "Geneesen heelkonstige aanmerkingen," Amsterdam, 1672.
[4] "De universa muliebrium medicina," Hamburg, 1603.

ment of cases of dysmenorrhœa due to a contracted cervix; while for the purpose of rapid forcible dilatation of the cervix expanding instruments have been devised by Osiander, Carus, Aveling, Busch, Mende, Leblanc, Hunter, Nott, Atlee, Priestly, Ellinger, Miller, Wilson, Schultze, Ball, and others.[1]

*Uterine Injections.*—All our authors after Hippocrates mention the use of uterine injections.

Hippocrates gives us a very minute account of the uterine cannula in use, and the method to be adopted in making the injections. The end of the tube will be polished like a sound, and made of silver; a perforation will be at the side, having beyond it the small tip of the catheter. There will also be other perforations, which will be placed at equal distances on each side of the catheter throughout its length; these holes will not be large, but narrow. The extremity of the injection-pipe will be round, all the rest hollow. To the pipe will be attached a bladder (of a sow) which has been first well scraped. Then place the milk of a mare in the bladder, first taking the precaution to close the holes in the injection-pipe with a linen rag. Having filled the bladder with milk, it is then to be tied so as to close it, and the injection-pipe having been placed in the uterus (the rag first being removed), the bladder is pressed and the uterus is washed out (D. O. W., c. 80).

Beside these uterine injections, the uterus was treated by infusions (ἔγχυτον), which, according to Littré, appear to have differed from the injections (κλυσμός) in consistence. It appears to us that these infusions were really poured into the vagina, the patient being in a position which prevented the escape of the fluid from the vagina for some time, and by this means some of the fluid would enter the uterus (D. O. W., i. 78).

[1] Chrobak, *loc. cit.*, c. xii.

*Vaginal Injections.*—In the Ebers Papyrus we have mention of peppermint-water being used for vaginal injections. Among the Hindus vaginal injections were made by means of the bladders of cattle, or of leather bags, while in almost every page of our authors, after Hippocrates, we have vaginal injections alluded to. These injections were, no doubt, made by means of bags formed from animals' bladders, or from leather, while Aetius says that the injections were sometimes given by an ear-syringe—"per auricularem" (c. lxxxvi.). Many receipts are scattered throughout these works for these injections, which consisted of emollients such as rose-oil, or of astringents such as pomegranate, and many other substances.

*Rectal Injections.*—Enemata originated with the Egyptians, and Chabas draws attention to the fact that out of 170 medical receipts in the Papyrus Brugsch twenty-eight are for enemata. Enemata are frequently mentioned in the Hindu medical works, and all medical authors refer to them. Oribasius in the "Collecta" has left us a very full account of rectal injections (B. VIII. xxiv.-xxxviii.), and, among other things, gives us a chapter on nutrient enemata, which, however, were known to and used by the Hindus.

Daremberg and Bussemaker make the following interesting remarks on the chapters from Oribasius: "Pour donner les clystères, les anciens n'avaient pas de véritables seringues, c'est-à-dire des pompes, mais des outres terminées par une canule, semblables a ces poires de caoutchouc dont on se sert pour les injections dans le vessie et qui, sauf la matière, sont, comme on le voit, renouvelées des Grecs. Il parait, aussi, par une figure que l'un de nous, M. Daremberg, a trouvée à Dresde, sur un très beau manuscrit de Galien, que l'outre était remplacée quelquefois par un entonnoir à long tube

dans lequel on versait de haut de liquide. Ainsi le clysoir serait aussi renouvelé des Grecs. Il semble que la canule des *clystères* (car ce mot serait à désigner le lavement ou l'instrument destiné à le donner) était très large, car Mnésithé dit qu'il faut toujours avoir soin de presser sur la partie vide de l'outre; autrement le liquid déjà injecté pourrait retomber dans l'outre à travers la canule" (Vol. II., p. 838).

*Catheters.*—Among the Hindus injections were made into the bladder by means of a tube four finger-breadths in length, and having an opening capable of allowing the passage of a small pea. The tube was smeared with oil, and then introduced, and the injection was made by means of the bladder of a buffalo or a pig. These catheters were made of gold, silver, copper, iron, hard wood or ivory.

Soranus tells us that in a case of dystocia, if there be a stone in the bladder, it should be pushed up towards the fundus of the bladder with a catheter (c. lxiv.).

Celsus says that the catheter should be made of copper, and for the female that it should be from 6 to 9 inches long. He remarks that the female passage is shorter than the male, and is discovered by a sort of mammary protuberance above the vagina (VII. xxvi.).

Adams remarks that "the ancients seemed to have fancied that it was necessary to fill up the internal cavity of the catheter with wool, or some such substance, in order to produce a vacuum when drawn out, believing that the catheter in this case acted upon the principle of the siphon" (Paul, VI. 59).

*Sitz-baths, Vapour-baths, Baths of Oil, the Thermæ.*—Baths are frequently mentioned by all our authors, and prescribed in many gynæcological cases. Soranus advises women to

abstain from baths during the period, especially on the first day (c. v.).

The *sitz-bath* is very frequently mentioned, and was evidently held in high esteem. Hippocrates, in speaking of aphthæ of the genitals, says: "If strangury supervene, a sitz-bath of the decoction of roses, or of briars, of myrtle or of olive tree, or of sage, is to be immediately given" (D. O. W., ii. 210).

*Baths of oil* are mentioned by Soranus as being agreeable, "multum etiam juvat in oleum immersio" (c. xlviii.); whilst Oribasius gives a lengthy account of these and many other kinds of baths ("Collecta," X. xxxvii.).

The *thermæ* were in great demand in the treatment of all chronic affections, and Soranus frequently recommends them in the treatment of the diseases of women. Oribasius, quoting Antyllus, advises women prone to abort to take a course of baths at the thermæ ("Collecta," X. iii.).

*Fumigation of Uterus and Vagina.*—Fumigations were extensively employed in all classes of uterine and vaginal diseases, and the myth that the uterus was like an animal, and was attracted by sweet-smelling vapours, whilst it retreated from disagreeable odours, is to be found in the works of Hippocrates, the pseudo-Hippocratic works on gynæcology, in the pages of Alexander Aphrodisiensis, Plato, Aretæus, and others. The technique of a fumigation is differently described by our various authors. In the pseudo-Hippocratic work on the diseases of women (ii. 133), we have the following details of the process: A vessel holding 4 gallons was taken, and a lid with an aperture in it was closely fitted to the vessel with clay. Through the aperture a tube or a reed was passed into a vessel in which was placed the medicinal substances to be used in the fumigation.

A hole, 2 feet deep, was dug in the floor, and wood was burnt in the hole until the sides became very hot, whereupon the larger pieces of wood were removed and the glowing charcoal left behind. The vessel was then placed in this excavation, and the heat caused the vapour of the medicated substances to pass along the pipe or reed, which was placed either in the vagina or the uterus. Care had to be taken that the vapour was not too hot, else the patient's parts would have been burnt. During the fumigation the patient was directed to examine her own cervix to ascertain its condition.

Soranus says, in describing the various lines of treatment adopted by others in cases of retention of the secundines, "that Strato, pupil of Erasistratus, used to place in a small vessel of silver or bronze (which closed with a cover made of tin) the following herbs . . . and having adjusted a small tube to the vessel the mouth of the tube was placed in the vagina, and the vessel was then gently heated." Soranus remarks "that this treatment may result in the vagina being severely burnt" (c. xxii.).

Oribasius, quoting from Antyllus, gives us yet a different account of the method of conducting a fumigation. He says "that a cover of wood, pierced in the centre, is placed on a vessel, whereon it is fixed by means of potter's clay or by a paste of flour. Into the opening a pipe is fixed, and the vessel is placed beneath an obstetrical chair, in the seat of which is an opening, through which a leaden pipe is passed and connected with the tube of the fumigating vessel. The pipe is passed into the vaginal orifice, and the vessel being heated the fumigation is made ("Collecta," X. xix.).

After reading the three methods above described, one is led to inquire for the ideas which prompted this form of treat-

ment, and we find that even the Ebers Papyrus and also the Hindu medical works mention that fumigation was employed in treating gynæcological cases. The ancients probably thought that the active properties of the aromatics used in the process of fumigation would be liberated, and would act much more effectually in the form of a warm vapour than if these bodies were merely applied in the form of injections or pessaries. They even thought that the vapour had the power of penetrating the tissues, for Hippocrates in one of his Aphorisms says: "If a woman do not conceive, and wish to ascertain whether she can conceive, having wrapped her in blankets, fumigate below, and if it appear that the scent passes through the body to the nostrils and mouth, know that of herself she is not unfruitful" (V. 59).

Among the aromatics most frequently employed may be mentioned frankincense, spikenard, cassia, and storax; while the fumes of wax and hot charcoal are mentioned in the Papyrus Ebers.

The various passages in our authors show us that the fumigation was used to cleanse the part, to promote the menstrual flow, to reduce inflammation of the uterus or vagina, and to soften the cervix and prepare it before it was dilated; in short, it was a kind of panacea, and had to form part of the treatment in nearly all affections of the genitals.

The practice of fumigating the vagina and uterus was continued during the Middle Ages, and we find in A. Paré's works a figure and a full description of an apparatus for fumigating the womb (Vol. II., p. 758); and Heister also mentions this subject. Fumigation of the genitals in modern times has not been much practised, and, with the exception of treating venereal sores and growths with the fumes of mercury, it is

almost unheard of nowadays. Quite recently Pincus[1] has attempted to revive it, in a modified form, for the treatment of metrorrhagia, subinvolution, hæmorrhage from myoma of the uterus, and for endometritis, his method being to introduce heated vapour into the uterine cavity by means of a special cannula, which is connected by a rubber pipe with a steam generator, the endometrium being acted on in some cases by direct contact with the vapour, and in others by contact with the heated uterine cannula.

*Fomentations.*—Fomentations were used by the Hindus in treating gynæcological cases, while all later authors refer to them frequently. Soranus says that fomentations were applied by means of flax, wool, or sponges; the latter, after being dipped in warm oil or hot water, were squeezed, and then, on being applied, were covered by cloths (c. xlviii.).

The vulva was frequently fomented by means of warm sponges, by which means affusions were also applied (Oribasius, "Collecta," IX. xxiii.).

Dry heat was applied by means of oval-shaped vessels filled with hot water, and by means of bladders filled with hot oil, as Soranus tells us in treating amenorrhœa (c. xlviii.). Hippocrates, in dealing with regimen in acute diseases, has left us an excellent account of fomentations. He says: "Of hot applications the most powerful is hot water in a bottle or bladder, or in a brazen vessel, or in an earthen one; but one must first apply something soft to the side, to prevent pain. A soft large sponge, squeezed out of hot water and applied, forms a good application; but it should be covered up above, for thus the heat will remain the longer, and at the same

[1] Pincus, "Weiteres über Vaporisation und Vapokauterisation:" "Instrumentarium, Technik, Indikationen" (*Centrabl. f. Gynäk.*, 1898, No. 10). Brothers, "Experiences with Intra-uterine Vaporization" (*Amer. Journ. of Obstet.*, October, 1899).

time the vapour will be prevented from being carried up to the patient's breath, unless when this is thought of use, for sometimes it is the case." He further mentions that barley and tares may be infused and sewed in bladders and applied, or bran may be used, while salts or toasted millet in woollen bags make good dry fomentations (Adams, Vol. I., p. 288).

Celsus also refers to the hot-water bottles used by the Romans. He says: "Quin etiam calido oleo replentur utriculi; et in vasa fictilia, a similitudine quas lenticulas vocant, aqua conjicitur" (B. II. xvii.).

*Cataplasms.*—Cataplasms were largely employed by the ancients, and Oribasius has left us over twenty chapters devoted to them ("Collecta," IX. xxiv.-lv.).

The linseed poultice is referred to by Hippocrates thus: "If on account of a watery flux from the uterus the lower portion of the abdomen is painful, then a good cataplasm should be made for the abdomen by mixing honey with linseed-meal (D. O. W., ii. 198).

Embrocations were also frequently employed, but, according to Antyllus, they had less effect than cataplasms; but they were to be resorted to in those cases where cataplasms could not be employed (Oribasius, IX. xxii.).

Anointing the body with oleaginous substances in case of pain, and in treating gynæcological cases, is referred to by Hippocrates (D. O. W., ii. 210).

*Leeches; Bleeding; Cupping.*—These three therapeutic agents were held in high repute among the ancients, and all our authors mention them in connection with the treatment of gynæcological cases. Thus, Hippocrates (D. O. W., ii. 100) advises the application of a dry cup to the regions below the breasts in case of metrorrhagia, and between the breasts to stop the menses ("Aphor.," V. 50); though Paul (VI. xli.)

warns us not to apply the cupping instrument near the breasts, "for sometimes they fall into it, and, swelling greatly, render the removal difficult." Hippocrates also lays stress on the application of a cup to the haunch (ἐπὶ τὸ ἰσχίον) after reducing a prolapsed womb (N. O. W., 5), while Paul recommends that a cup be also applied to the navel; and Soranus mentions both bleeding and cupping in treating cases of retention of the menses (c. xlviii.).

Hippocrates is the first of the classical writers to mention bleeding, but we find that leeching, bleeding, and cupping were practised by the Hindus (Wise, pp. 173-178), while cupping-horns have been found in the Egyptian tombs.

The method adopted by the Hindus in cupping was to use a horn, the larger extremity being applied over the scarified part while the air was sucked out at a small hole in the pointed extremity of the horn. In other cases a hollow gourd was prepared by making a hole in it, and then placing a piece of burning rag in it.

Celsus (II. ii.) mentions two kinds of cupping instruments, one made of horn, and one of copper,[1] while Oribasius ("Collecta," VII. xv.) mentions one made of glass; Paul (VI. 41) likewise mentions glass cups, but remarks that those made of copper have a more powerful attraction, as being able to endure a stronger fire, whereas those of glass are apt to break. Antyllus tells us that the cupping vessels made of silver ought not to be used, as they become too hot, and burn the patient (Oribasius, VII. xvi.).

In some cases the cup was applied and the spot dry-cupped, the vacuum being caused by a piece of lighted cloth placed in the vessel. If, however, the dry-cupping was not sufficient,

[1] Vulpes, in his illustrations of the surgical instruments found at Pompeii, has figured some of the bronze cupping vessels (Pl. VI., Figs. 4, 5).

then the spot cupped was scarified and the cup again applied (Paul, VI. xli.).

*Cautery.*—The cautery is referred to by Hippocrates in the treatment of pelvic abscess which points at the pubes. He directs that it should be here opened by the cautery. Aetius, in dealing with the same subject, says that if the swelling is due to an outpouring of blood (pelvic hæmatocele?), instead of the sharp probe or the scalpel, we should apply the cautery to the summit of the swelling, and by this means evacuate the pus (c. lxxxvii.). Aetius also gives us an excellent description of the use of the cautery, in incision of the breast, for stopping the hæmorrhage and eradicating the disease (c. xlv.), while Aretæus directs us to open abscesses of the liver with the cautery. Oribasius, in dealing with thymus of the genital organs, says that when it is malignant, if it be cut out it will return, so that it is necessary in operating on it to have recourse to the cautery ("Collecta," XLV. xii.).

The cautery was used by Hindu surgeons, as the following passage will show: "Fire can sometimes be employed, when neither the knife nor escharotics can be used, as it is the strongest of all escharotics. It is applied in different ways, sometimes by means of long pepper, goat's dung, the tooth of a cow, an arrow-point, long, circular, or hook-shaped iron probes" (Wise, p. 180).

Hippocrates says those diseases which medicines do not cure, iron (the knife?) cures; those which iron cannot cure, fire cures; and those which fire cannot cure are to be reckoned wholly incurable ("Aphorisms" VII. 87).

The cautery iron is described by Hippocrates in his book on "Hemorrhoids," c. ii. He says: "I recommend seven or eight small pieces of iron to be prepared, a fathom in size, in thickness like a thick specillum, and bent at the extremity,

and a broad piece should be on the extremity, like a small obulus."

The *cautery knife* is mentioned by Galen ("Isagogue," c. xix.). Thus, in describing the operation of excision of the breast, Galen says that it may be performed by a razor heated in the fire.

Besides using the actual cautery, potential cauterization was practised, and among the substances used for the purpose was arsenic.

*Massage.*—Massage is mentioned by Soranus in several places in connection with the treatment of gynæcological cases. Thus, in retention of the menses, he says that, when the patient is beginning to regain her health and is taking exercise she should be treated by "frictionibus totius corporis et partium circa uterum. Quodsi tamen in uteri frictione in ipsis locis facta attactus manus nudæ contusionem adferat," etc. In another place he says that if menstruation is absent, and this be due to disease of other parts of the body, then "etiam ipsi uteri loco curam adhibere frictione et iis, quæ consolidare possunt" (c. xlviii.). He also refers to the employment of a skilled rubber (τῶν ἐμπείρων ἀλειπτῶν) to aid us in treating a case of amenorrhœa.

These passages show us that not only was massage of the whole body resorted to in gynæcological cases, but that special massage of the uterus was in vogue.

The employment of massage in the treatment of disease, and for relieving pain and fatigue, must be regarded as a universal practice, whose origin is of high antiquity; for the Chinese manuscript Kong-Fau, which is dated 3000 B.C., seems to have contained detailed accounts of massage, while among the Persians, under the title of *surchuna*, among the Greeks and Romans under the terms ἀνάτριψις and *frictio*,

we must class all those friction movements now included under the term "massage,"[1] a word which, according to Piorry, is derived from μάσσειν = to rub, but according to Savary is from the Arabic word *mass*, to press softly.

In the Hindu system of medicine we find shampooing[2] and rubbing both used, in order that the members may remain healthy, and that the skin may be kept in good condition (Wise, p. 98). Even among uncivilized races massage is practised, and Captain Cook tells us that the natives of Otaheite practise massage for the relief of muscular fatigue, using percussion, kneading, and friction.

Massage among the Greeks had its origin in the fact that it came in time to be part of the system of training undertaken by those who contested in the gymnastics of the Olympian games. In the days of Homer those who engaged in the wrestling contests were dressed in the *perizoma*, but without their bodies being oiled. Later on the girdle was discontinued, and oil was rubbed into the body; according to Thucydides, the Lacedæmonians were the first to adopt the plan. There, accordingly, sprang up a class of rubbers, called among the Greeks aliptæ (ἀλείπται), whose office it was to anoint the body of the competitors in the contests, the object of this anointing being to prevent excessive perspiration. The body was not, however, merely anointed, but the oil was well rubbed in; and as these aliptæ in time became experts, they also became advisers as to exercise and mode of life, and they, as well as the Roman aliptæ (who were slaves), massaged in private houses, and it is one of these aliptæ that Soranus recommends us to employ in treating a case of amenorrhœa.

The iatraliptæ, according to Pliny (H. N., XXIX. ii.), were

[1] Busch, "General Orthopædics, Gymnastics, and Massage."

[2] The term "shampoo" is derived from the Hindoo *champna*, to press.

at first only the slaves of physicians, but they afterwards took rank as physicians, and devoted themselves to curing diseases by anointing and massage. Those that flourished at Rome do not seem to have enjoyed a good moral reputation,[1] for Seneca declares that he would rather thrust his hand into the fire than have it massaged by any of them, male or female. Hippocrates, in his work "De Articulis," says that the physician should understand massage, while Celsus tells us that Asclepiades (128 to 56 B.C.) wrote much about it, and claimed a considerable amount of originality for his work; but Celsus claims that Hippocrates had, before Asclepiades, clearly laid down the indications for the employment of friction in the words "qui dixit, frictione si vehemens sit, durari corpus, si levis molliri; si multa minui; si modica impleri." Galen, Oribasius, Aetius, and Paul have all left us much on the subject of general massage, while from the passages in Soranus we see that Brandt, in our present time, cannot claim to have been the first who massaged the uterus.

*Pessary.*—The Papyrus Ebers shows us that both the pessary and the suppository were used by the Egyptians in gynæcological cases. Thus, in treating the axat disease, directions are given for preparing jaspis with honey and collyrium, which were to be smeared on lint, and this was then introduced into the vagina, and left there for four days. We also find the pessary mentioned in the medical works of the Hindus. Hippocrates gives us many receipts for pessaries, and classifies them as emollient, astringent, and purgative. The first of these varieties reduced inflammation round the womb and softened the cervix; the second class restrained discharges from the female genital organs; the last group

[1] "Callidus et cristæ digitos impressit aliptes" (Juvenal, Sat. VI.).

cleared the uterus of pathological discharges and of the products of conception, and also aided the menstrual flow. Pessaries were frequently used by the ancients in their endeavours to produce abortions, and these generally contained powerful drugs, such as cantharides, elaterium, and colocynth. Hippocrates in his "Oath" forbids the use of such pessaries.

The word "pessary" is derived from πεσσός, a small stone, the Latin equivalent being *pessus* or *pessum*. The term used by Hippocrates is προσθετόν, the verbal adjective of προστίθημι, and signifies added, filled, or adapted to.

Celsus, in speaking of the use of pessaries, says, "Sed alia quoque utilia sunt, ut ea quæ fæminas subjiciuntur πεσσούς Græci vocant" (V. xxi.).

The pessary being the chief means employed in treating the diseases of the womb and vagina, we have reference made to it by all our authors. In order to prepare a pessary, a piece of lint was rolled into the form of a finger, and a string was attached to this, in order to maintain it in shape, and to enable it to be withdrawn from the cavity into which it had been introduced. Before being inserted the pessary was covered with the liquid or the ointment that the practitioner wished to apply to the diseased part. In other cases, pieces of sponge or balls of wool were soaked in medicated substances and applied in the form of a ball or tent. Some pessaries were shaped like a penis, and were called πριαπίσκος; Paul alludes to one in describing the operation for imperforate pudendum (VI. lxxii.).

Not only were pessaries placed in the vagina, but they were also inserted into the uterus and into the rectum (D. O. W., ii. 133).

Before inserting a pessary, the patient generally bathed herself, then a fumigation was administered, and after that

the pessary was inserted. After its withdrawal the patient again bathed herself, or had a sitz-bath (D. O. W., ii. 163).

Among our authors on gynæcology, the writer of the Hippocratic work on the "Diseases of Women" and Aetius have left us very many formulæ for the different varieties of pessaries; while Oribasius, who mentions the opium pessary ("Synopsis," IX. li.: *πεσσοὶ διὰ ὀπίου σκευαξόμενοι*) has given us much information on the same subject, his material having been derived from Antyllus, and to this latter authority Paul is indebted for his chapter on pessaries.

Adams says that Myrepsus is the most copious writer on the subject, for he describes the preparation of forty-five different sorts of pessaries.

*Suppository.*—The word "suppository" is derived from *supponere* = to place under. The Greek term *βάλανος* corresponds with the Latin word *glans*, for when the suppository was made it resembled an acorn in shape.

The suppository differed from the pessary inasmuch as the medicated substances were not usually applied by means of lint or wool, but were rolled into an acorn-shaped body, and then introduced into the uterus or vagina. In some passages, however, in Hippocrates we find that the balanos consisted of wool saturated with various ingredients (D. O. W., ii. 177).

*Trochisks.*—Celsus says, "pastillique quos *τροχίσκους* Græci vocant." The trochisks, or troches, according to Galen, derived their name from their spherical shape. Paul says that there were three different kinds of troches, for some of them had to be swallowed, some injected, and some rubbed in. They were in some cases somewhat similar to suppositories, but were flat in shape. They were used for treating diseases of the rectum, but Soranus refers to their use for the vagina in cases of erosion of the cervix: "Quodsi insuper erosio adsit,

etiam remedio nigro cum charta ex aceto, vel trochisco (τροχίσκῳ) aliquo eorum qui adversus intestinorum difficultatem præscribuntur, uti debemus" (c. xlix.). Oribasius gives us also an example of the trochisk used for gynæcological purposes, "trochiscus ad fluxum sanguinis mulierum" ("Synopsis," III. ci.).

We see from the foregoing that pessaries, suppositories, and trochisks were among the most ancient therapeutic means of treating diseases of the uterus and vagina, and if we turn to the Arabian authors, or to a medieval one such as Paré (Vol. II., p. 774), or even to a more recent one, such as Heister, we shall find the suppository and pessary in constant use in gynæcology.

In our own times the suppository was reintroduced into gynæcological practice by Sir James Simpson, and for years he was in the habit of applying a variety of substances to the vagina in the form of medicated suppositories. These were not made like the ancient pessaries, with wool or lint for a foundation, but were composed of the drug used, compounded in the form of an ointment, and brought to a requisite degree of consistence with one or two drachms of yellow wax to the ounce of ointment; about an ounce of the different ointments made four pessaries.[1]

That the method pursued by the ancients of applying these remedies to the vagina in the form of pessaries was an excellent one, no one will dispute, and we think that it is much to be regretted that the custom is not more widely followed nowadays: for the glycerine plug, to which is occasionally added a few drops of ichthyol or a little iodoform, is but a poor representative of a neglected but most excellent therapeutic measure.

[1] Simpson's Obstetrical Works, vol. i., p. 99.

*Uterine, Vaginal, and Rectal Plugs.*—Our authors made frequent mention of a variety of plugs to be used for the uterus, vagina, or rectum; thus, Pliny says: "Ram's wool washed in cold water and steeped in oil is used for female complaints, and to allay inflammation of the uterus. Greasy wool used as a pessary brings away the dead fœtus and arrests uterine discharges." In treating some complaints of women the Hindus introduce a piece of cloth soaked in oil into the vagina.

Soranus, Aetius, Oribasius, and Paul direct that a ball of wool tied round with a string should be pushed into the vagina after reducing a prolapsed womb.

The uterus was frequently plugged, Soranus says, in dealing with a case of menorrhagia, that some "lana mollis digito vel specillo inducatur uteri osculo"; and if this is not sufficient, then we proceed thus: "Quod si fiat, parvam spongiam oblongam itidem madefactam quam maxime fieri potest in profundum immittere oportet, ut excretus sanguis recipiatur neque in grumos conversus consensum faciat et inflammationes" (c. xlviii.).

Aetius directs us to use a rectal plug after reducing a retroflexion of the uterus (c. lxxvii.), and Oribasius refers to the use of pieces of lint for the rectum.

In the Hippocratic work on "Fistulæ," a tent is described as being pushed into the rectum. "When it [the tent?] has been pushed inwards, introduce a ball of horn into the rectum and leave it there; and when the patient wants to go to stool, let it be taken out and again replaced, and let this practice be continued for five days" (Adams, vol. ii., p. 817).

*Intra-uterine and Vaginal Pessaries.*—The first mention that we have of an intra-uterine pessary occurs in the Hippocratic work on the "Diseases of Women" (ii. 133). After

dilating the cervix, a hollow lead sound was taken and filled with ground mutton-fat, and introduced into the uterus, where it kept up the dilatation.

In speaking of prolapse of the womb, the author of the treatise just mentioned directs us after reducing the prolapsus to take a pomegranate and split it into two halves, and introduce one of these halves into the vagina.

Soranus, in writing on the same subject, says that Diocles was wont to introduce into the vagina a pomegranate that had been peeled and soaked in vinegar. Both these bodies, no doubt, acted in a mechanical way, as well as through their astringent properties.

A large ball of wool is mentioned by Soranus, Aetius, Oribasius, and Paul, to be used after reducing a prolapsed uterus. This was inserted into the vagina, and aided in preventing prolapse during the treatment. Sponges were also introduced into the vagina, and Albucasis used an animal's bladder as a pessary.

Chrobak, in sketching the history of the modern pessary, says that "the first reference to the instruments in use to-day dates from the time of Ambroise Paré" (1573). This is quite correct; but, nevertheless, we shall show that the solid pessary was in use long before the time of Paré.

Malgaigne,[1] in his introduction to the works of Paré, thus refers to a solid pessary used by Mathieu de Gardi, also called De Farrare, who died in 1472: "Une grande dame de la Bourgogne avait une chute de matrice; Mathieu lui conseilla un pessaire en cire assez solide, de la forme d'un pénis, et qu'on entourerait de laine trempée dans des liquers astringentes."

In the works of Paré (p. 369, vol. i.) we have a figure of an

[1] *Op. cit.*, Vol. I., p. xcv.

intra-uterine pessary given, with the following description: "Instrument d'or ou d'argent pour mettre en la matrice, en forme de pessaire," etc. On p. 742, vol. ii., Paré gives two figures: the one represents an oval pessary, the other a round one, and Malgaigne notes that Paré had already figured the oval one in 1564.

It is unlikely that Paré was the inventor of these pessaries, for Rousset (the writer on Cæsarean section[1]) in 1581 points out that a woman that he visited in 1579 had been wearing a cork pessary for forty years, and that it had been placed in her vagina in 1539. He also, in another passage of this work, speaking of pessaries, says: "Item, les vns le font rond, les autres en ouale, les autres triangle ou quadrangle inequilateral, à angles obtus; les vns en forme de cœur applatie; quelques vns de rondeur oblongue et tronquee; les vns rond en plat, pertuisé au milieu, ou non." Bauhin, who translated Rousset's work into Latin in 1582, says, in an appendix, that the German women were accustomed to use an empty walnut, covered with wax and shaped to resemble a fowl's egg, for a pessary in case of prolapse of the womb. Jean Bauhin (a brother of the translator of Rousset) was the first to conceive the idea of supporting the uterus by means of a pessary with a stem.

Heister gives in his work several engravings of pessaries, oval, quadrangular, and triangular in shape. He describes "each of them as being perforated in the middle, and formed out of cork or wood waxed over, or else of silver or gold." At another place he describes an "elastic pessary of steel wire turned into a conical worm."

*Ligatures, and Methods of arresting Hæmorrhage.*—The

[1] "Traité Nouveau de l'Hysterotomotokie, ou Enfantement Césarien," etc., Paris, 1581.

arrest of hæmorrhage, up to the times of Celsus and Galen, appears to have chiefly been by cold compresses, styptics, or the cautery. Celsus shows us very clearly that the ligature was in use in his day (V. xxvi.), but he also mentions that patients who were subjected to amputation often died from hæmorrhage and fainting during the course of the operation: "Sæpe in ipso opere, vel profusione sanguinis, vel animæ defectione moriuntur."

Vulpes, in commenting on the instruments preserved at Pompeii, says that among them is a forceps for removing pieces of bone from the surface of the brain in case of fracture of the skull, and he thinks it may have been used for taking up an artery. He also thinks that the Greeks were able to tie an artery for hæmorrhage, and he bases his opinion on an inscription dug up at Athens, and from a treatise by Archigenes (A.D. 100) existing in the Lauretian Library at Florence, wherein it is said that "the vessels carrying (blood) towards the incision must be tied or sewn up."

Soranus remarks that hæmorrhage from the uterus is difficult to deal with, because we cannot arrest it: "neque laqueorum constrictione, neque suturis uti licet" (c. xlix.). He also mentions that the uterus had been extirpated when it had become prolapsed, but he does not give any details as to how the hæmorrhage was controlled, though he mentions the fact that the operation was successful, and that some of the patients lived to an advanced age.

Galen, Rufus, Aetius, and Oribasius all mention that torsion of the vessels was employed to arrest hæmorrhage, and Galen refers to the cautery knife.

The materials in use for ligatures were strings of flax and hemp. Galen alludes to sutures made of wool, and Paul mentions woollen sutures for stitching wounds of the eyelids.

Animal sutures and ligatures are usually regarded as quite a modern idea; but although Dr. McSweeney introduced silk-worm gut, and Dr. Young proposed catgut in 1813, and Dr. Physick of Philadelphia in 1814 brought forward chamois leather as a material for ligatures, nevertheless we find that sutures of animal tissues were spoken of by Rhazes as early as 900 A.D., and were used for stitching up wounds of the abdomen. These sutures were made of the strings of the lute ("corda liuttai vel cithare"), while Albucasis alludes to the stitching of a wound in the bowels with a fine thread made of the twisted intestines of an animal: "Filo subtile, quod abstersum est ex intestino animalis annexo."

Catgut[1] itself is of extreme antiquity, as we find that the strings of the Egyptian harps were of catgut, while the strings of the old Greek harps in the time of Homer were formed of the twisted intestines of sheep.[2] As Simpson remarks, the word "cord," as applied to the strings of the harp, etc., is itself, in fact, sufficiently indicative of the material of the strings, as originally the term χορδή simply signified intestines.

Metallic threads were used by the Greeks, but not for sutures or ligatures.

[1] "Catgut" is corrupted from "gut cord."

[2] Simpson, "Acupressure," p. 492.

# CHAPTER XXII.

## RÉSUMÉ OF THE DISEASES OF WOMEN.

### Peritoneum and Connective Tissue.

*Parametritis and Pelvic Abscess.* — Hippocrates, Soranus, Aetius, and Paulus have each left us descriptions of pelvic inflammation and pelvic abscess, whose origin, in their minds, was always intimately connected with the womb. Thus, Hippocrates tells us that after suppression of the menstrual fluid for nine months the retained blood becomes purulent, and it may then be evacuated by way of the vagina, or it may travel towards the groin and form a swelling there (D. O. W., i. 2). Soranus (c. lx.) gives us many of the facts that make up a good clinical picture of a patient with cellulitis, and he attributes the symptoms to inflammation of particular regions of the womb. Aetius, quoting Archigenes, under the heading of Uterine Abscess, has given us an excellent description of a pelvic abscess, and tells us in minute details the steps to be adopted in opening such an abscess by way of the vagina (cc. lxxxv., lxxxvi.); while Hippocrates evidently refers to a pelvic abscess when, in one of his Aphorisms (V. 47), he says: "If the portion of the uterus seated near the hip-joint suppurate, it gets into a state requiring to be treated with tents."

Galen ("De Loc. Aff.," VI. v.) remarks that after suppression of the menses a tumour forms in the flank, and this, he

says, is a sign that indicates inflammation of the deep parts; while Aetius draws our attention to a case of suppurating hæmatocele (c. lxxxvii.), and Hippocrates mentions the opening of a hæmatocele before it suppurates as a dangerous practice (D. O. W., i. 2).

In considering the various passages which deal with parametritis in our authors' works, we are not inclined to think that the ancients understood the true rôle played by the folds of the broad ligament in these cases. They evidently supposed that in cases of uterine inflammation the tumour formed by the side of the uterus was due to the swelling of the wall of the uterus, and that when a pelvic abscess occurred it was really an abscess of the uterus itself.[1] Their clinical observation that these swellings by the side of the uterus occurred when the womb was inflamed was quite correct, but they could hardly have been expected to have understood that these swellings, which to all appearances were part and parcel of the uterus itself, were in reality in the tissues adjoining the uterus;[2] and yet in some cases the swelling was recognised as being separate from the uterine wall, for Soranus differentiates between what he calls inflammation of the hypogastrium, inflammation of the uterus, and inflammation of the peritoneum; and he points out that in inflammation of the uterus a tumour exists which moves with the uterus when the latter is displaced, but that in inflammation of the hypo-

[1] Bennet: "The ancients do not appear, however, to have had a correct idea of the origin and nature of these abscesses, which they describe as abscesses of the uterus. They evidently thought that the uterus itself was the seat of inflammation, and consequently the source whence the pus came" ("Practical Treatise on Inflammation of the Uterus," p. 239).

[2] Duncan: "Dr. Bennet believes that inflammation and abscess in the pelvis have generally been confounded by ancients and moderns with acute metritis and iliac abscess. According to my views, the confounding of diseases by these ancients and moderns is nearer the truth than the separation of them by most authors of our day" ("Perimetritis and Parametritis," p. 35).

gastrium, although a tumour also exists, yet it does not move when the uterus changes its position.

Again, we know that the sudden arrest of menstruation is a frequent cause of pelvic hæmatocele, inasmuch as an undue pressure is put upon the thin-walled veins contained between the folds of the broad ligament, a rupture takes place, and the blood is poured forth into the cavity;[1] but the ancients appeared to have considered that a suppression of the menses led to an accumulation of blood in the womb, and this in time led to the suppressed blood finding its way by some means from the uterus to the surface about the groin, the menstrual fluid either being in the form of blood or of blood and pus. Hippocrates shows us clearly that he considered that the suppression of the menstrual fluid would give rise to a swelling by the side of the uterus; but if after a time the womb changed its position and the menstrual flow took place from the mouth of the womb, then the swelling by the side of the uterus would disappear, inasmuch as the fluid comprising it would find its way into the uterus: *καθίσταται το ἐξεστηκὸς κατὰ τὴν λαπάρην, διαδιδοῖ γὰρ ἐς τὰς μήτρας* (D. O. W., i. 2).

### Affections of the Fallopian Tubes and Ovaries.

Soranus says, in dealing with inflammation in the posterior and interior portions of the uterus, that, if a finger be passed into the rectum, it will encounter a swelling, which differs from that met with in inflammation of the rectum, inasmuch as pain does not immediately follow on the introduction of the finger, but only after pressure has been exerted for some little time, for the reason that the tumour recedes (before the finger), thereby allowing the bowel to assume its proper

[1] Lawson Tait, "Diseases of Women and Abdominal Surgery," p. 228.

position, and also because the tumour changes its proper position if the patient be placed on her knees. This description must refer to an inflamed tube or to a prolapsed tube and ovary, not to a parametritis (c. lx.).

Again, Soranus refers to a case of hernia of the ovary, which he himself saw during a herniotomy (c. iii.).

Herrgott has suggested that a passage in Soranus (c. xii.) may refer to ectopic pregnancy, and Daremberg thinks that the descriptions of the mole found in some of our authors are really pictures of ectopic pregnancy; be this as it may, Albucasis has certainly left us a description of ectopic pregnancy about which there are no doubts, for he observed parts of a fœtus escaping through the abdominal wall by suppuration.[1]

With regard to operations on the ovaries, we feel sure that, since paracentesis abdominis was an operation very frequently performed by the ancients for dropsy (Paul, VI. l.), it is more than probable that ovarian cysts were frequently tapped, either deliberately or in mistake for dropsy; and we support this contention by alluding to a case mentioned by Aretæus,[2] where he describes the tapping of an abdominal hydatid and the escape of the daughter cysts by the trocar. That the ovaries were sometimes removed as a deliberate operation appears at first sight improbable,[3] yet we have the statement by Athenæus, in his "Denosophists," that Xanthus relates that "Adramyttes, the King of the Lydians, was the first man who ever castrated women, and used female eunuchs instead of male eunuchs." That it was *possible* for the ancients to do abdominal sections successfully we need not

[1] "De Chirurgia," cura J. Channing, Oxon., 1778.

[2] "Chronic Diseases," B. II., c. i.

[3] Baas states that the Hindus removed the ovaries in women to restrain their lust.

doubt, especially after reading the description by Fellin of a case of the Cæsarean operation performed in Central Africa in modern times in which the temperature during the after-treatment never rose above 101° F., nor the pulse beat faster than 108, while on the eleventh day the wound was completely healed and the woman as well as usual. If such an operation could be performed by these uncivilized people, and if ovariotomy can be successfully carried out by some of the native tribes of Australia, then there is nothing improbable in the statement made in the Hindu works on medicine, that abdominal section was practised for intestinal obstruction; that the Alexandrian surgeons operated on the liver; that Cæsarean sections were successfully undertaken by the Romans and the Jews; and that Praxagoras advised incision into the gut to allow the fæces to escape in cases of volvus or intussusception.

### Affections of the Uterus.

(*a*) *Stenosis and Rigidity of the Cervix.*—Hippocrates, Soranus, and Aetius deal at some length with these conditions, and in the treatment Hippocrates gives us some excellent descriptions of the technique to be followed when dilating the cervix by graduated pine rods (D. O. W., ii. 133), and in other cases by leaden sounds (D. O. W., i. 13; Sterility, 217), or by tents of raw flax (D. O. W., ii. 157).

Aetius in dealing with the same subject gives us from Archigenes a full account of the use of sets of sponge tents (c. xcv.).

(*b*) *Laceration, Erosion, and Ulceration of the Cervix.*—Hippocrates says that if the mouth of the womb gapes in a manner contrary to nature, the menstrual periods become more abundant and viscid, they come on more frequently

than normal, and the patient suffers from pain in the lower part of the abdomen and in the loins. The treatment should be by pessaries and astringents (D. O. W., ii. 166).

Soranus says (c. xlix.) that an erosion which succeeds an ulceration may be the cause of menorrhagia; and later on he alludes to the treatment of erosion of the cervix by means of trochisks. He also mentions that pessaries of an irritating kind may cause deep ulcers in the cervix, which heal with difficulty (c. xlviii.); and he remarks that ulceration may cause atresia of the os, through the formation of cicatrices after the healing of the ulcers (c. xlviii.).

Aetius tells us that fissures round the mouth of the womb are caused by difficult labours, on account of the size of the child's head, and that these fissures are discovered by examination of the patient by means of the speculum. In the treatment, be it noticed that Aetius says that all surgical interference, and medicines of an irritating nature, are to be avoided, for such induce inflammation (c. cvii.).

In other chapters Aetius mentions, from the words of Archigenes, "carbuncular and sordid" ulcers of the cervix, also "nomæ et ulcera despascentia" of the uterus.

(*c*) *Metritis.*—The descriptions given us, by the author of the Hippocratic works on gynæcology, of inflammation of the uterus refer to both acute and chronic metritis, and the clinical pictures that he draws are most excellent and accurate (D. O. W., ii. 169-171).

This author has also given us an excellent account of septic endometritis following on an abortion, and he treats such a case by uterine injections (D. O. W., i. 63).

Soranus (c. lx.) has given us a most elaborate account of the various symptoms and signs which are to be found following inflammation of the various regions of the uterus

and cervix. His descriptions embrace a consideration of parametritis and pelvic abscess. Aetius also deals at length with the same subjects.

*Displacements of the Uterus.* — Hippocrates mentions in various chapters (D. O. W., ii. 137-142) displacements of the uterus to the right, to the left, to the front, and towards the seat. No directions are given to instruct us how these various displacements are to be diagnosed by physical examination. Besides these displacements, the imaginary ones, such as the fleeing of the womb up to the heart and liver, are also described (D. O. W., i. 7).

The chapter in Soranus that deals with displacements is unfortunately mutilated, but in the description of the anatomy of the uterus he remarks that the ligaments of the uterus are shortened by inflammation, and that this organ is then dragged upon and lies to the side; while if the ligaments through any cause shall become weakened and relaxed, then the uterus falls down (c. iii.).

Aetius has left us an excellent account of anteversion, retroversion, and lateral displacement of the uterus, and all the supposed symptoms that accompany each of these conditions, together with some remarks on the treatment of such cases by the knee-elbow position and by the use of the sound (c. lxxvii.).

*Prolapse of the Uterus and Hysterectomy.*—Prolapse of the womb is referred to in the Papyrus Ebers, in the Hindu System of Medicine, and by Hippocrates, Soranus, Aretæus, Oribasius, Aetius, and Paulus.

Soranus gives us an historical review of the various opinions held with regard to prolapse, and taking his views and the views of other authors, the generally received idea appears to have been that prolapse was due to the stretching, rupture,

or relaxation of the muscles and membranes that normally kept the womb in its position.

With regard to treatment, the Ebers Papyrus refers to fumigation and local medication to be applied to the prolapsed organ until it was brought into a fit condition to be restored. Hippocrates (D. O. W., 144) and Soranus (c. lxvi.) give us very full accounts of the treatment. The bowels and bladder were first emptied, and the patient placed on her back, her pelvis elevated, and the prolapsed parts smeared with hot oil. Pressure was then applied to, and an endeavour made to replace, the prolapsed organ, and if the manœuvre was successful a large plug of wool, soaked in astringent substances, was inserted into the vagina, and the patient remained at rest for three days, after which the plug was changed.

In addition to the above, Hippocrates recommends succussion. This was practised after the patient had been bandaged to a ladder-like framework, the patient being left in an inverted position for hours. In some cases he recommends incision to be made into the side of the uterus (?), the object of which is not clearly defined.

Both Hippocrates and Soranus mention the use of a pomegranate in case of prolapse, the fruit being introduced into the vagina to serve, not only as a mechanical pessary, but also as an astringent body.

Soranus (c. lxvi., c. iii.) and Aetius (c. lxxvi.) both refer to vaginal hysterectomy in cases of prolapsed wombs which either could not be restored or which had become gangrenous; and they state that the patients had lived to a good old age after some of the operations. The method pursued in the extirpation is not even hinted at, but probably the cautery was used.

The Talmudic writers also mention that the spleen and the uterus may be excised without the death of the animal resulting.

*Cancer of the Uterus.*—Hippocrates (D. O. W., 159) tells us that when cancer of the womb is well advanced it is incurable. Aetius (c. xciv.) gives us a lengthy account of the different forms of cancer that attack the uterus, but he does not mention operative treatment; on the contrary, he warns the surgeon against interference in a case of malignant thymus (c. cv.) and malignant polypus of the womb (c. xcvii.), but Oribasius advises the use of the cautery in case of malignant thymus ("Collecta," XII. xlv.).

*Inversion of the Uterus.*—Inversion is mentioned by Soranus, who remarks that traction on the cord may produce it (cc. xxii., lxvi.).

*Fibroid Tumours, Polypus, and Calculus of the Uterus.*—Under the title of "Mole," Soranus, Oribasius, Aetius, and Paulus describe what is to our minds a fibroid tumour of the womb, though Daremberg and Bussemaker think that the descriptions refer to ectopic pregnancy.

In the differential diagnosis of this tumour our authors point out how it may be distinguished by palpation from dropsy, and by percussion from tympanites.

Aetius, under the title of "Cauda," gives us an account (c. civ.) of a fleshy body that springs from the mouth of the womb and fills the vagina, or may even project beyond the vulva like a tail. The body is probably a polypus or a hypertrophied cervix (vaginal portion), though Adams suggests that it may have been a cauliflower excrescence. The treatment recommended was incision, the growth being drawn down by a volsella, a ligature passed round it, and the part excised.

Calculus of the uterus is mentioned by Hippocrates and Aetius (c. xcviii.), this condition probably being one of calcareous degeneration of a fibroid tumour of the womb. Aetius describes how such a body may be forcibly expelled from the uterus, and points out that if it be embedded in the cervix, or if it be adherent to the mouth of the womb, we must introduce a speculum into the vagina and resect the body with a scalpel.

### Affections of the Vagina and Vulva.

Soranus mentions atresia of the vagina (c. iii.), and says that if a membrane (hymen?) obstructs the passage, and prevents the escape of the menstrual fluid, then it should be incised.

Celsus and Aetius have given us a long and excellent account of atresia vaginæ, and full directions for operating on such cases and for keeping the new passage patent.

*Thymus Pudendi.* — Aetius (c. cv.) described thymus of the genital organs; Oribasius also refers to the same growth. From their descriptions, the growths appear to have been papillomata.

Aetius says that the thymus should be incised if it be a simple growth; but should it be malignant, Aetius, who follows Philumenus, advises that it should not be touched, for fear of great hæmorrhage. Oribasius advises that the malignant thymus should be treated by the cautery (XII. xlv.).

*Tubercles.*—The description which Aetius has left of these small bodies causes us to think that he was referring to the ovula Nabothii and to granular vaginitis (c. cviii.). He describes them as small millet-like excrescences which arise in the neck, or at the mouth, of the womb, or in the pudendum itself. He treats them by astringent pessaries.

*Eczema* (?). — In chapter cix., under the heading "De

scabris uteri pustulis," Aetius describes what we take to be an eczematous condition of the pudendum accompanied by pruritus, for which he recommends sitz-baths.

It is more than probable that Agrippina suffered from an eczema of the genitals, and the excessive irritation of the parts drove both Messalina and herself to seek relief from coitus among the brothels of Rome.

*Abscess* (*Bartholinian?*). — Aetius says that if an abscess should occur in the alæ or labia pudendi, and should point towards the seat, it should not be opened, for incisions in this region, which is full of wrinkles, are apt to lead to the formation of a fistula. If, however, the abscess points towards the meatus urinarius, it may be incised (c. cx.).

Amenorrhœa, Menorrhagia, Metrorrhagia, Leucorrhœa, and Dysmenorrhœa, are dealt with by our authors, and the chapter on amenorrhœa by Soranus is one of the most excellent in his work.

Hæmatometra, Pyometra, and Hydrometra, are dealt with by Hippocrates in several different chapters (D. O. W., ii. 178).

### Excision of the Clitoris.

Under the heading of "Excision of the Nympha," Aetius describes how the clitoris was removed. Having seized it with a pair of forceps, it was pulled forward and resected close to the teeth of the forceps (c. ciii.).

### Gonorrhœa.

The period at which gonorrhœa first attacked the human race is not known, but since we recognise what an enormous factor this affection is in the etiology of the diseases of women, it is necessary to examine those passages in ancient writers which apparently refer to the disease; for if gonor-

rhœa did exist—and we believe it did—the women in the past must for certain have suffered all those complications, such as tubal disease and acute metritis, with which we are familiar at the present day, as the result of this disease.

Moses, in the fifteenth chapter of Leviticus, says: "When any man hath a running issue out of his flesh, because of his issue he is unclean" (verse 2). The Septuagint version renders *hazzab*, the man with the issue, by ὁ γονορρυής, the man with a gonorrhœa; but the objection that has been urged against considering the "issue" referred to as a gonorrhœa is found in verse 13, where it is stated: "When he that hath an issue is cleansed of his issue, then he shall number to himself seven days for his cleansing." It is urged that the interpretation of the verse is that eight days after infection he was clean, therefore that the affection could not have been gonorrhœa. This interpretation, however, is not correct, as may be seen by considering verse 28, when, in dealing with females at the time of the menstrual flow, the law was: "But if she be cleansed of her issue, then she shall number to herself seven days, and after she shall be clean"; and so we think is verse 13 to be interpreted: that when he that hath an issue is cleansed of his issue, then (after being quite cured) he shall number to himself seven days for his cleansing.

With regard to the term γονόρροια, we find that this term was used by Rufus, Aetius, and Paulus to express a condition of spermatorrhœa, not of gonorrhœa as we now understand the term; and Galen says ("De Locis Affect.," VI. vi.) that gonorrhœa is an involuntary excretion of sperm, and is derived from γονή, seed, and ῥεω, to run.[1] But Moses does

[1] The word "clap," so often used for gonorrhœa, is, according to Sevediaur, derived from "clapiers," which were public shops kept by prostitutes.

not mean that the issue mentioned in verse 2 is spermatorrhœa, because that affection is mentioned in verse 16, and verse 32 says: "This is the law of him that hath an issue, and of him whose seed goeth from him, and is defiled therewith."

In Deuteronomy (xxiv. 1) it is stated that if a man should marry a woman, "and it come to pass that she find no favour in his eyes, because he hath found some uncleanness in her, then let him write her a bill of divorcement."

Herodotus says ("Clio," i. 105) that the Scythians in an expedition came to Ascalon, a city of Syria, and that some of them pillaged the temple of Venus Urania. However, the goddess inflicted on the Scythians and all their posterity a female disease, and those affected by it were called οἱ Ἐνάρεες. Of the nature of this affection we have no particulars.[1]

Celsus (VI. xviii.) gives us an account of balanitis and phimosis, which he says are due to ulcers under the prepuce, or in the glans, or in the urethra,[2] and from them we may have a purulent discharge. Besides these affections of the penis, he also describes the simple, phagedenic, serpiginous and gangrenous (venereal?[3]) ulcers, but he nowhere mentions that these diseases are due to sexual intercourse. He also mentions inflammation of the testicle, which arises apart from any external violence.

[1] Bumstead and Taylor translate this passage thus: "Sent upon them and their posterity the woman's disease, which is characterized by a running from the penis." This latter part is, however, a pure invention, the words used by Herodotus being merely θήλειαν νοῦσον.

[2] Till about the year 1753, it was generally supposed that the matter from the urethra, in cases of gonorrhœa, arose from an abscess in the passage (Cooper's "Surgical Dictionary," art. "Gonorrhœa").

[3] By "venereal" one implies that these affections were directly or indirectly due to sexual intercourse. The term was first so used by Bethencourt of Rouen, in 1527. It is, however, to be noted that Celsus does not say that any of these affections were due to sexual intercourse.

Juvenal makes an allusion to what appears to have been a venereal disease, and Martial,[1] in his "Epigrams," hints at the same thing. Still, it is strange that neither Greek nor Roman authors give us clear descriptions of these diseases, the explanation probably being that these diseases were not generally alluded to, and Celsus, before he refers to the subject, apologizes for mentioning diseases "quæ invitissimus quisque alteri ostendit."

Women who could not have intercourse, either on account of the menses or on account of disease of the genitals, were termed *ancunulentæ*, and these prayed to Juno Fluonia, and were accustomed to use the *aster atticus*. The plant is mentioned by Pliny ("Hist. Nat.," XXVII. xix.) as being a sovereign remedy for diseases of the groin. The Greeks termed it *βουβώνιον*, while the Romans called it *bubonium*, and the word came to be applied to the disease for which it was given, whether in the case of females or males; this is the origin of our term "bubo." The Romans said of a female who communicated a disease to a man, "Hæc te imbubinat."[2]

Roman doctors declined to treat secret diseases, and therefore the rich were tended by their own slave doctors, while the poor were driven into seclusion—a custom, in fact, that prevailed among the children of Israel, who "were to put out of the camp every leper, and every one that hath an issue" (Num. v. 2).[3]

But it is probable that, though the Roman doctors may have declined to attend to venereal diseases, the *archiatri*, who acted somewhat after the fashion of the dispensary

[1] "Partem gulosam solvit indecens morbus" (XI. 61).

[2] Scaliger, quoted by Sanger, "History of Prostitution," p. 85.

[3] "In 1497 James IV. of Scotland, in consequence of the frightful prevalence of the venereal disease in Edinburgh, issued the celebrated proclamation banishing the infected from the city."—Acton.

surgeons of the present day, treated those diseases embraced under the generic term "morbus indecens," inasmuch as they were bound to treat the poor gratuitously, though they might charge the rich. At subsequent periods this disease (gonorrhœa), and in many instances its complications of swelled testicle and cystitis, were described with more or less detail by Mesue (904); by Ali Abbas, one of the Persian Magi (980); by Rhazes (852); by Albucasis, and others.[1]

[1] Since writing the résumé on gonorrhœa we have been able to consult the Jerusalem Talmud, and the frequent references therein to gonorrhœa confirm us in the opinion that this disease played an important rôle in the etiology of the diseases of women in ancient times.

THE END.

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